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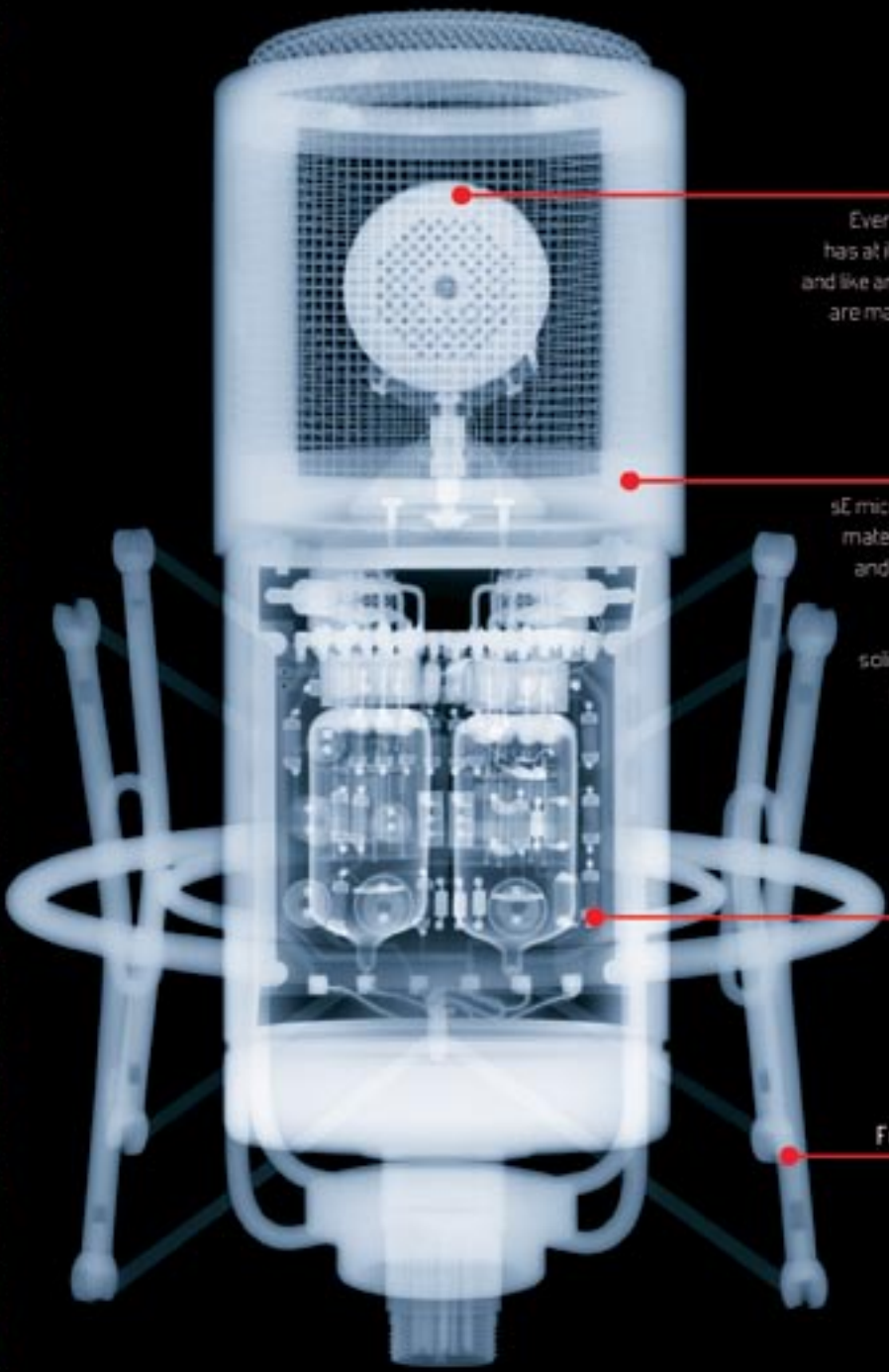

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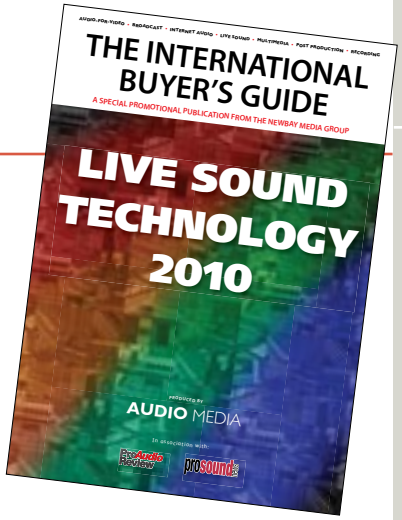
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leader

I got into a bit of a tizz recently, over a school disco of all things. I'd gone to pick the children up and caught the end of a series of dancing competitions. The prizes, of which they were quite a few, were compilation CDs of about 20 or so disco classics and kid-friendly pop. That's very generous, I thought, until I was given one to look after on the way home. It turned out to be a supermarket CDR burnt with a bunch of tracks obviously ripped from a wide variety of sources. There was no theme or common time frame, so I assume it was just the pick of a DJ's record collection.

'Let it go', I thought to myself. 'You can let it go.' But apparently, I couldn't. After a couple of weeks spent simmering over the coals of righteousness, I decided to contact the DJ and inform him of his sinful ways. At least, I thought, if we get into an argument I can publish it and use it as fodder for the Audio Media Leader column.

My email was a beauty. It had everything. It even included the passage:

"I feel bound to point out that, aside from the basic copyright issues here, that you are earning money from your mobile disco. The distribution of these CDs is a part of the value inherent in the charges you make for your services. As a professional entertainer, DJ, and (according to your business card) a member of the Federation of Small Businesses, I would hope that you are aware of the damage such distribution is doing to the music production and related industries."

See? On fire.

The email was just the therapy I needed. So I sat back, looking forward to a month when I could simply publish extracts from an angry, irrational email rather than sweat over 450 profound words while printers sit, twiddling their thumbs and glancing at their expensive printer watches.

Then came the reply... I was ready for anything, except maybe actual scrapping outside the gates after the bell:

"Hi Paul

Thanks for your advice, which I've looked into and have contacted MCPS to apply for a AP2 Licence! As they are now closed for the weekend I will be sorting things out with them on Tuesday. If the cost is too high then I might just go back to giving sweets and glow sticks away as I used to do before!"

I admit, I couldn't help feeling just a little bit disappointed.

Paul Mac, *Editor*

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AUDIO MEDIA (Europe), 1st Floor, 1 Cabot House,
Compass Point Business Park, St Ives, Cambs, PE27 5JL.
Telephone: +44 (0)1480 461555 – Facsimile: +44 (0)1480 461550

General E-mail: mail@audiomedia.com – Press Release E-mail: pr@audiomedia.com

Managing Director/Circulation
Angela Brown
a.brown@audiomedia.com

Group Publisher Europe
Raffaela Calabrese
r.calabrese@broadcast.it

Editor In Chief
Paul Mac
p.mac@audiomedia.com

News/AMSR Editor
Jo Fletcher-Cross
jfcross@audiomedia.com

Production Editor
Lanna Marshall
l.marshall@audiomedia.com

Design & Production Manager
John-Paul Shirreffs
jp.shirreffs@audiomedia.com

European Sales Manager
Graham Kirk
g.kirk@audiomedia.com

Regional Sales Manager
Bob Kennedy
bkennedy@imaspub.com
+44 (0)1279 861264

US Sales Manager
Dave Carson
dcarson@nbmedia.com
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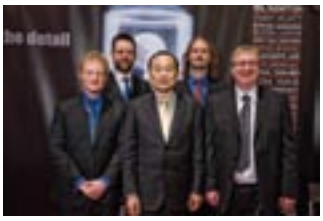


sE Electronics and Sonic Distribution are moving to new UK premises in Hitchin, Hertfordshire. "We were bursting out of the seams at the old place. We were only going to be there temporarily and we ended up staying for four years," said Director James Young. "We've been looking for somewhere we could expand into; somewhere that's got enough space to successfully warehouse the sE European operations, and also somewhere we could build in proper demo space, so we could get dealers down to do training, and high-end users down to come and use the studio." There will be an Andy Munro-designed studio at the new facility.
www.seelectronics.com

NEW PRODUCT

Softube has released the Tonelux Tilt EQ plug-in. Modelled after Tonelux's original hardware EQ, first featured in their MP1a mic preamp, the Tilt EQ plug-in allows simultaneous adjustment of low and high frequencies, meaning users can adjust a recorded track, live instrument, or entire mix with the turn of a dial. The Tilt plug-in is a joint development effort between Tonelux designer Paul Wolff and Softube. The plug-in has new features not found on the original hardware, and includes a detailed model of the transformer used in the MP1a mic pre-amp.
www.mvproaudio.com

NEW USER

Holophone Simulates War

A Holophone H2-PRO microphone has been put to use in an unusual recording project. Sound mixer Ezra Dweck, who has worked in post production, mixing, and editing for more than 15 years on projects such as the TV series Brothers and Sisters and CSI: New York, was employed to mix effects for a Military Humvee Simulator Training project designed to protect US troops from IED (Improvised Explosive Device) bombings and other insurgent attacks. Dweck, who recorded, edited, and mixed the audio for the project, used the H2-PRO to capture realistic sound recordings from the interior and exterior of the vehicle.

Surround sound was an important factor for the project as the audio had to be fully immersive. In order to capture realistic audio, Dweck visited the US Army's national training centre in California's Mojave Desert, driving around the base in the Humvee to capture the realistic sounds of the vehicle in motion.
www.holophone.com

NEW USER

Abbey Road eMerging With DAD

UK pro audio company eMerging, the UK distributors for Digital Audio Denmark's high-end A-D and D-As, have sold four DAD AX24 converters to EMI's Abbey Road Studios, for use in the Abbey Road Mobile. All four are equipped with plug-in MADI options, and two include DAD's new direct Pro Tools HD interface card.

Abbey Road Studios engineer Jonathan Allen, who undertook test recordings with the AX24 before Abbey Road purchased the units, commented: "For the last few years, the Abbey Road Mobile Recording unit has been looking to create affordable recording and editing packages without compromising on quality. Key to this was our search for a unit that had world-class digital converters, great built-in mic amps, and the ability to run MADI back to the control room. The DAD AX24 not only ticked these boxes but made one of the best arguments for working at higher sampling frequencies."
www.emerginguk.com

NEW PRODUCT

Zero-G has released a follow-up collection to its Dark Skies Cinematic Ambiences package. Deep Impact has a sample library containing 650 instruments, featuring atmospheres, special effects, soundscapes, textures, sci-fi drones, and more. It has 40 construction kits containing full audio backdrops that are then broken into their component parts so users can make their own creations.

www.zero-g.co.uk

NEW PRODUCT

Green & Green has released the Bass-O-Nator, a custom built bass trap that can be free standing or mounted to walls. The resonator is tuned to 'trap' problem bass frequencies. The company can also calculate the frequency of the standing waves from users room dimensions for an additional fee, and individually tune the resonators to take care of the problem.

www.unityaudio.co.uk

NEW PRODUCT

Native Instruments have released Session Strings, a virtual string ensemble for Kontakt 4 and the free Kontakt Player. The package recreates a string ensemble comprising four violins, three violas, two cellos, and two double bases, captured and produced in one of Germany's most renowned recording studios by sampling expert Thomas Koritke's new sound design house e-instruments.

www.native-instruments.com

NEW USER

Minnesota-based Wild Sound Recording Studios recently installed a Solid State Logic AWS 900+ SE console to upgrade the sonic signature and workflow of its control room. Wild Sound specialises in high level acoustic recording of classical, folk, ethnic, and jazz performances.

www.solidstatelogic.com

PRODUCT UPDATE

PreSonus has announced that it is now shipping Studio One 1.5.1. It's a free update for all registered users of Studio One Artist and Studio One Pro and includes new features such as a MIDI offset for recording, ISRC code validation, and a cache-file generation meter in the performance monitor and transport bar.

www.presonus.com

NEW PRODUCT

City of Drum and Beats, a GURU expansion pack, has been released by FXpansion. It includes kits and loops ideal for hip-hop, grime, house, and dubstep, and features an exclusive suite of sounds from Mike Acosta, also known as DJ Michael Trance.

www.fxpansion.com

NEW PRODUCT

California-based Big Fish Audio has released two new sample libraries. Ambient Skyline is a collection of ambient and cinematic chill-out loops, rhythm beds and music beds, while Detroit Soul is a tribute to the great Soul and R&B artists of the 60s and 70s featuring live drums, bass, guitars, keyboards, percussion, a funky horn section, and more.

www.timespace.com

NEW PRODUCT

R24 Zooms Into View

Zoom has announced the launch of its new R24 recorder, which adds a sampler/drum machine, eight additional recording tracks and six channels of phantom power to its R16 recorder. The R2 combines four production tools within one device, with a digital multi-track recorder with 24-track playback and eight-track simultaneous recording, an audio interface, a control surface, and a drum pad sampler.

The R24's new sampler function consists of 24 built-in voices that can be triggered using eight pads and three bank keys to assign sounds to each track and create loops. Users can also use the unit's drum machine and its 400 rhythm patterns to create original backing beats, or output a metronome for tempo control. Exclusive loops by Grammy Award winner Peter Erskine are included. The R24 records on SD memory cards and supports cards up to 32GB for over 100 track hours of recording. Over 100 built-in studio and mastering effects can be used to enhance recordings. In addition, the R24's USB audio interface allows users to record tracks to any Mac or PC and utilise the system's control surface capabilities to manage the functions of most DAW software programmes. Cubase LE 5 is included.

www.zoomfx.com

FACILITY UPGRADE

An Antelope At The Met'

Metropolis Studios has installed five Antelope Audio Isochrone Trinity Master Clocks to complement its existing Trinity and 10M Automatic Atomic Clock. All six Trinity units are specifically for their six mastering rooms, all of which are being fed from the 10M Rubidium atomic clock. "We needed clocks that could quickly and easily cope with all our different format demands," said Crispin Murray, the studio's Technology Development Manager.

www.unityaudio.co.uk

NEW PRODUCT

MOTU Releases MicroBook

MOTU has announced the MicroBook, a USB bus-powered audio interface that turns a Mac or PC computer into a personal 4x2 recording studio. It features four simultaneous inputs for a microphone, a guitar, and a keyboard or other stereo line device. The mic pre-amp delivers neutral colouration and pristine sound, with 20dB pad and 48V phantom power for condenser mics. Programmable analogue, digital, and headphone outputs provide flexible monitoring options.

The mic input is a balanced quarter-inch jack, due to the Microbook's slim form; but users can use a mic cable with an XLR plug by using the included XLR to-quarter-inch adapter.

The MicroBook has seven separate EQ filters available on every input and output, including low-shelf and high-shelf, with intuitive graphic control of each EQ parameter via the CueMix FX software. Classic compression is also available, with individual settings for each input and output.

www.motu.com

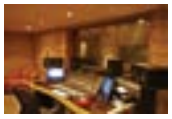
FACILITY UPGRADE

Scoring mixer Robert 'Bobby' Fernandez has installed an LCR array of PMC TB2S-A MkII active reference monitors at his Secret Studio facility. Fernandez worked at Warner Bros' Eastwood Scoring Stage in Burbank for 16 years, before embarking on a career as an independent scoring and remix engineer in 1995. He added the TBS-A MkII active reference monitors as near-fields for his Avid Pro Tools-equipped remix facility, to augment an existing large-format IB1S system, which he installed several years ago.

"I like to mix at reasonable sound levels," said Fernandez, "and so the smaller format TB2S-A makes a lot of sense."

www.pmc-speakers.com

FACILITY UPGRADE



Mastermix Studios, in the South African province of Gauteng, has recently installed a full surround ADAM Audio set-up, consisting of P33As, A7s, and Sub 8s. The studio was originally built in the 90s, and is the first in Africa to have a variable acoustic live room. Co-executive Producer and composer Mr Lebo M, who is known for his work on the score for *The Lion King*, *Congo*, and *Tears Of The Sun*, arranger Themba Mkhize, and orchestrator Peter McLea used the studio to record the World Cup music for the opening ceremony.

www.adam-audio.com

CORRECTION

In last month's issue, we said Sontronics had released three new microphones. Unfortunately we got the name of two of those microphones wrong – the new models are in fact the STC-10, the STC-20, and the STC-2X.

NEW USER

Game On For Solid State Logic

Game On Audio has recently installed a Solid State Logic C300 HD Master Studio System with 32 faders and 192 channels of DSP in its new Montreal Studio A. The company, which provides audio for video games from its studios in Montreal and Los Angeles, and its partner studios in Vancouver, New York and Paris, has participated in over 100 titles from 15 studios including Electronic Arts, Ubisoft, 2K Games, Tangent Games, Activision and Microsoft Studios. The C300 is being used to handle the complex post-production mixing for video games, and is joined by and SSL XLogic Mynx with two SuperAnalogue mic pres for vocal recording, and two SSL XLogic Delta Link MADI HD units. "We chose the C300 because it offers the flexibility to take on the different missions we offer to complete a project," said Sam Girardin, CEO of Game On Audio. "Right now we are mixing in 5.1, but 7.1 is just around the corner and the C300 is ready to go there now."

www.solidstatelogic.com

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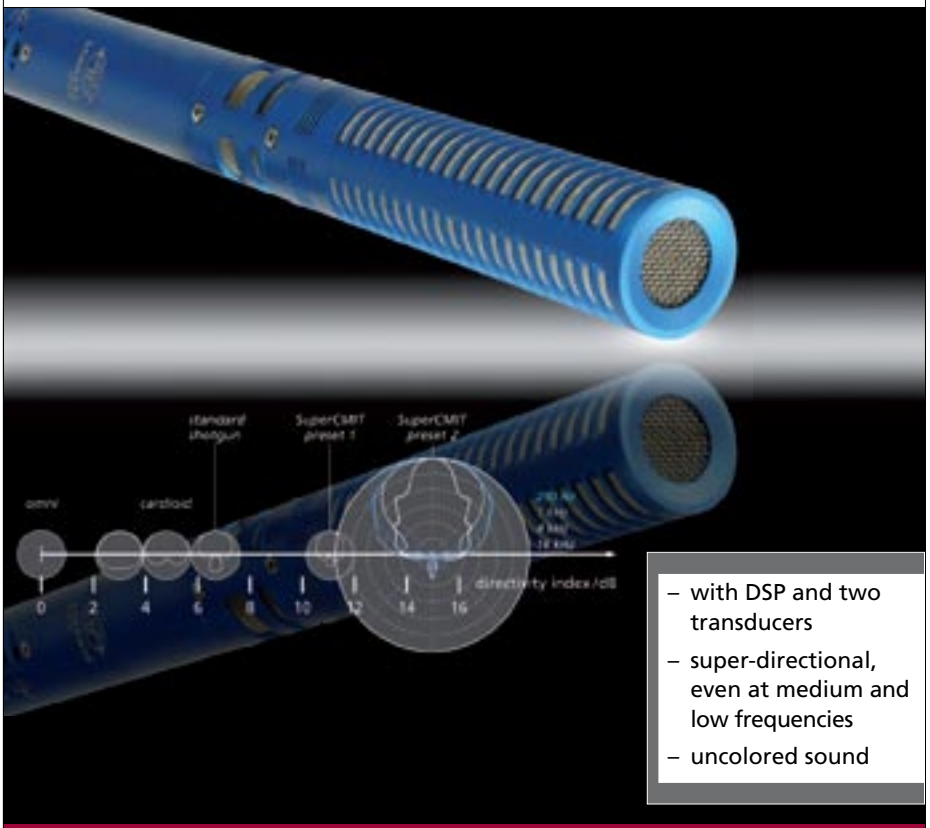

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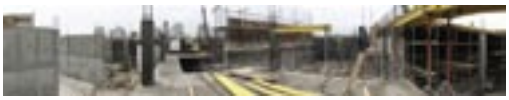

Russian company Cinelab has awarded the contract to design and build its new state-of-the-art film facility to UK acoustic and studio design consultancy White Mark. Due for completion at the end of 2010, the new complex will have a total of 14 studios including four dubbing theatres, two of which will be built to Dolby Premier License criteria. It will also feature an extensive and highly specified Foley suite, multiple edit and pre-production suites, sound design rooms and a large orchestral studio. The new complex will allow Cinelab to expand its remit and offer an entire post-production service.

www.whitemark.com

LICENSING AGREEMENT

Music video game company Harmonix has made a technology licensing agreement to use iZotope's real-time pitch detection and pitch shifting middleware in the latest version of its popular interactive game, Rock Band. "With the production values of video games rivalling that of commercial albums and blockbuster films, consumers expect the same caliber of video and audio quality during dynamic, real-time game play," said Mark Ethier, CEO of iZotope. "Rock Band 3 is an ideal platform for us to showcase iZotope's technology so we can provide gamers with studio-grade audio effects."

www.izotope.com

FACILITY UPGRADE

De Lane Lea post-production studio has upgraded to Meyer Sound Cinema Experience systems in studios 1, 2 and 3. "Switching to Meyer Sound is virtually unprecedented in our industry," said General Manager Mike King. " Yet it made complete sense. Everyone who has visited the facility can hear the difference." De Lane Lea is the first post-production facility in Europe to switch to Meyer Sound Cinema Experience systems. The upgrade included Meyer Sound Acheron 80, Acheron LF, Acheron Studio, HMS-10 full-range two-way loudspeakers, Galileo, SIM, X-800 subwoofers and refurbished consoles.

www.meyersound.com

FACILITY UPGRADE

London audio and visual production house Factory Studios has invested in an Avid ICON D-Control ES console. The ICON D-Control ES will enable the studio to record, edit, route, mix, automate, recall and perform other Pro Tools tasks from the console surface. The investment will support a new studio the company has built at its Soho facility, which will allow both stereo and Dolby digital mixing and monitoring in a standalone room. The console will be used for a wide range of work including sound design, audio post, music composition, mixing and mastering.

www.avid.com

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WAVES Signature SERIES

Available separately and in Waves Mercury. waves.com

WAVES

NEW USER

The Metropolitan Opera in New York has purchased a 40-channel Solid State Logic C100 HDS Digital Broadcast console as part of its digital upgrade to 5.1 for its series *The Met: Live In HD.*

The Met is simulcasting the series in high definition with 5.1 surround sound to selected cinemas across the world. The Met's compact broadcast room is located in the balcony area at the back of the auditorium, so the C100 HDS was chosen because it is designed specifically for space-limited applications.

The series is seen in more than 1,200 venues in 44 countries, selling more than 2.2 million tickets during the 2009-2010 season.

www.solid-state-logic.com

NEW INSTALL

Czech outside broadcast provider Reckord has installed a comprehensive intercom system from Riedel Communications in its new HD OB truck REC5 HD. The communications infrastructure is comprised of a Riedel Artist digital matrix intercom system, several RiFace professional mobile radio interfaces, and connections to remote studios via Connect Duo.

The truck will be the largest HD OB truck in the Czech Republic, equipped with up to 24 cameras.

"The modularity in terms of matrix sizes gives the flexibility we need for future enhancements and upgrades, making the Riedel Artist system a real long-term investment," said Robert Kallista, Managing Director of Reckord.

www.riedel.net

FIELD REPORT

World Cup Winners

The 2010 World Cup gave companies a chance to show off their broadcast equipment. Lawo had more than 50 systems in use during the tournament. Audio feeds from all commentators were sent digitally from the stadiums to the International Broadcast Centre via a Lawo Nova73 HD routing matrix, and mobile control rooms at each venue were also fitted with Lawo systems. ARD and ZDF used Lawo consoles for the broadcast of all games to Germany, as well as numerous providers such as outside broadcast units from Alfacam, Outside Broadcast, HD Signs, and Sky TV, South Africa's nationwide TV broadcaster SABC, and Chinese national broadcaster CCTV. BBC, ITV, and American sports channel ESPN also used Lawo systems.

Mayah had 30 C11 codecs in use for ISDN communications between various locations in the country and broadcasters' headquarters. DTS provided surround sound technology for ESPN and other broadcasters in the United States and Brazil.

Both Waves and PreSonus presented solutions for the omnipresent noise of the vuvuzela trumpet favoured by South African football fans. Waves created a real-time processing chain consisting of two plug-ins, which reduced the noise and increased commentators' intelligibility. A special PreSonus Studio One file was also created to filter out the noise.

www.lawo.de
www.mayah.com
www.waves.com
www.presonus.com

FIELD REPORT

Stagetec Has A Big Weekend

Radio 1's Big Weekend festival recently took place in Bangor, Wales. Trucks from BBC Radio Outside Broadcast's new fleet were covering the festival, all of which are equipped with Stagetec consoles or routers. There were four stages. The main stage had a line-up including Florence and the Machine and Rihanna, with Faithless, Ellie Goulding, and Crystal Castles performing on the In New Music We Trust stage. Both of these stages used Stagetec Nexus as the stage delivery system.

The main mix from the dance stage, which featured DJs Chris Moyles and Tim Westwood, and the Live Lounge stage where Radio 1 DJ Jo Whiley presented acoustic bands and covers for her show, was handled by two Stagetec Aurus consoles installed in two of the new general purpose trucks. The mix was then fed to the main hub truck near the main stage where all the stages were brought together for transmission on Radio 1. A sub truck was linked to the hub truck shipping different material to Radio 1Xtra.

www.stagetec.com

NEW PRODUCT

Avid has introduced the VENUE MADI Option Card. This opens up new workflows to VENUE users, making it easier to integrate VENUE into any existing MADI environments such as broadcast facilities. With the card installed, VENUE users can send and receive up to 64 channels of audio between their VENUE system and a wide variety of MADI-compatible devices – including routers, other digital mixing consoles, and mobile recording set-ups. In addition, users can now accommodate more complex workflows that would typically require the use of a patchbay.

www.avid.com

AWARD WINNER

Producer Francesca Panetta has won this year's Sony Gold Award for Best Internet Programme. Set up by herself and Felix Carey in 2008, the Hackney Podcast is fully edited on SADiE's BB2 desktop audio editing system. Panetta first used SADiE for editing on joining Radio 3 in 2000, and when the BB2s were introduced to the BBC in 2004, she bought one. "SADiE is a great editing programme for any speech programmes," said Panetta.

www.sadie.com

DISCONTINUED PRODUCT

Calrec Audio has announced it will discontinue production of its analogue audio consoles as of November 30, 2010. Until then the company is offering an opportunity to make final purchases of its S2, C2, and M3 analogue consoles as well as modules and card assemblies. The company has pledged to provide component spares and repair services for these consoles for a minimum of 10 years from shipment date. The decision to stop making analogue consoles results from the broadcast market's general adoption of digital technology.

www.calrec.com

Prism Sound

Deadmau5's logical choice of interface

When Deadmau5 went looking for a high quality I/O solution, it became apparent that there was only one choice.

Orpheus provides Prism Sound's world renowned performance, sound quality and state-of-the-art clock technology in a dedicated FireWire unit compatible with both Windows and MAC OS X.

Orpheus features line, microphone and instrument inputs, selectable RIAA Equalization for turntables, a built-in premium-quality monitoring mixer and concurrent ADAT and switchable S/PDIF or AES3 digital I/O plus support for outboard MIDI devices. The Microphone inputs include MS matrix processing and dual headphone outputs are provided each with their own volume control.

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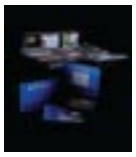
Available until 31st August 2010

NEW PRODUCT

Yamaha has launched its new DSR active loudspeaker line. All signals in the four new loudspeakers are handled by 48-bit internal processing. The D-Contour multi-band dynamics processor constantly monitors the amplifier output and varies the amount of boost in each frequency band to balance dynamic sound with consistent clarity. The internal digital crossover networks use FIR-X filtering to ensure linear phase and time alignment accuracy, while Class-D amplifiers deliver up to 1300w of power with precision damping.
www.yamahaproaudio.com

NEW PRODUCTS

Midas has launched two new additions to the PRO series, with the PRO9 and the PRO3. PRO9 tops the series, with an 88 channel input count and 35 buses and dual stage boxes offering placement flexibility up to 200m apart and 500m from the FOH position. PRO3 is a lower-budget model in the series, with 48 input channels, 27 buses, and six stereo effects, with the DL251 fixed format, 5U I/O rack. Also unveiled was the XL8i, a digital performance system aimed at the install market, and a full range of standalone digital snake products.



www.midasconsoles.com

FIELD REPORT

Loudspeaker manufacturer Funktion One incorporated a Prism Sound Orpheus FireWire computer interface into the Ambisonics rig it used at this year's Glastonbury Festival. "With Orpheus as part of our audio chain we believe this year's Glastonbury audiences will enjoy a new level of high frequency presence and clarity," said Funktion One's Managing Director Tony Andrews. The rig was located in the Glade, a platform where artists from a wide spectrum of backgrounds participate to create original and experimental work.

www.prismsound.com

NEW PRODUCTS

Product Launches At ABTT

There were several new products to see at the 2010 ABTT Theatre Show, which took place at the Royal Horticultural Halls in London. Soundcraft was showing off the Vi1, a smaller-lower priced desk in the Vi Series. The Vi1 is a complete standalone package with 32 channels of analogue input to 27 analogue outputs, plus six digital inputs, four stereo FX returns, and six digital outputs. It also features a widescreen Vistonics interface, which displays all parameters for 16 channels side by side on a single 22-inch Vistonics touch screen.

Orbital Sound had the Da-Cappo Micro microphones range on its stand, including the DA-12 single-ear microphone and the DA-04 lapel microphone, plus the DA-15 single-ear microphone with in-ear monitor piece. Manufactured in Australia, all feature Da-Cappo's tiny European-designed microphone capsule, which measures just 2.5mm in diameter. The capsule is extremely resistant to sweat and moisture, which contributes to a longer lifespan in hot, on-stage environments.

Allen & Heath used the show for the UK launch of its iDR-64 larger format fixed I/O MixRack. The iDR-64 comprises 64 mic/line inputs and 32 XLR outputs in a 9U frame, and features the iLive 64x32 RackExtra DSP mix engine.

www.soundcraft.com
www.orbitalsound.co.uk
www.allen-heath.co.uk

NEW PRODUCTS

Renkus-Heinz Shows Off New Speakers

Renkus-Heinz has added a range of products at the InfoComm show in Las Vegas. Two additions were made to the Iconyx family of digitally steered array loudspeaker systems. The ICL-LM-R is a low-mid range module designed to augment a full-range IC Live array. The speaker's seven 6.5-inch low frequency neodymium transducers significantly improve low-mid frequency pattern control and performance below 800Hz.
The IC212S-R subwoofer is a dual 12-inch subwoofer designed for applications that do not require the extended low frequency range of the IC215S-R subwoofer. Also launched at InfoComm was the IC2, a crossover array that integrates digital beam steering into a versatile point source design. The company also unveiled the CF/CFX series, a modular point source line array loudspeaker system, designed to meet the needs of small and mid-sized venues. The system can be flown, ground-stacked, or pole-mounted.

The Aubion x.8 also made its debut. The product of a collaboration between AFMG and German hardware designers DSPECIALISTS, and distributed by Renkus-Heinz, the Aubion x.8 is an eight-channel A/D-D/A converter designed to complement AFMG's EASERA and SysTune.
www.renkus-heinz.com

FIELD REPORT

Donbass Arena in Donetsk, Ukraine, is the first stadium in Eastern Europe designed and built to meet UEFA regulations for elite stadiums. The stadium has just held its first concert: The Hits of the 80s, featuring The Gypsy Kings and Demis Roussos. D.A.S Audio provided a sound reinforcement system, which included 32 D.A.S Audio Aero 48 line array cabinets, with low frequency support from 24 LX-218 subwoofers.

www.dasaudio.com

ON TOUR

Crowded House are currently on a UK and European tour, with sound equipment and crew supplied by ADLIB. The company has provided an L-Acoustics V-DOSC system, with dV-DOSC infills, ARCs side fills, and SB28 subs. This was specified by FOH Engineer Angus Davidson for its sound and clarity. Dolby Lakes is being used for processing and EQ, and the L-Acoustics kit is being powered by LA8 amps.

www.adlibsolutions.co.uk

FIELD REPORT

The new flagship of Royal Caribbean International, The Oasis of the Seas, has been launched, with three Meyer Sound Matrix3 audio show control systems installed, along with a total of 268 loudspeakers. Fifteen different Meyer Sound models are installed in more than two dozen systems, with each system comprising from two to 55 loudspeakers. The systems are used for everything from musical productions to nightclubs.

www.meyersound.com

FIELD REPORT

The Stockholm Jazz Festival has celebrated its 30th anniversary, with performances from artists such as John Scofield, Wayne Shorter, and Courtney Pine. Bromma-based rental company Electrosound provided the festival's audio system for the first time, supplying a unique Alcons Audio LR16 rig which featured three clusters which supplied two parallel stages – while one stage was being used, the other was being set up for the next artist.

www.alconsaudio.com

TASCAM
TEAC PROFESSIONAL

HS-P82 High Resolution Multi-Track Field Recorder

HS-P82

NEW

TASCAM's HS-P82 offers 8 tracks of the highest quality recording, yet it's built for the rigors of location recording with reliable solid-state performance. The HS-P82 is built for location television and film production audio, with eight microphone inputs for big shoots or reality programs. The standard XLR microphone inputs include phantom power and analog limiting, with trims controlled from recessed front-panel controls. In addition to the eight individual tracks, a stereo mixdown can be recorded for instant use during editing.

Audio is recorded at up to 192kHz/24-bit WAV format to a pair of Compact Flash cards. This solid state media is completely reliable with no moving parts, and you can record to both cards simultaneously for extra security. The Broadcast WAV files include iXML metadata for quick import into nearly any video or audio editing system, either via the USB 2.0 connection or a standard card reader.

The HS-P82 offers several options for power. It runs on either AA or NP batteries, an included AC adapter, external DC input or a V-mount adapter for Endura batteries. An internal slate microphone is available for naming takes. Functions like a 5-second pre-record buffer, front panel lockout and headphone output alert signal further inspire confidence.

For high-resolution music recording, a set of AES/EBU connectors is available for attaching pedigree A/D converters and preamplifiers. SMPTE timecode in and out, video and word sync are provided. All of this is controlled from a colour touchscreen interface which makes operation fast and simple.

For more details and demo call:

Gary Maguire ..07836 329281

Alex Farrell ..07779-795656

visit www.tascam.co.uk e mail hsp82@tascam.co.uk

DR-02D DR-100 HDP-2 DR-680

whatsupuk@audiomedia.com

To All In Tents And Pop Er.. stages.

Glastonbury is 40 – give or take the odd fallow year. KEVIN HILTON reports on what was then, and what is now.

So, 40 years of the Glastonbury Festival - give or take a few fallow years for the good old farming tradition of giving the earth (and possibly organisers and revellers alike) the chance to recover. Nearly four decades of alternating torrential rain and mud baths with brilliant sunshine. A catalogue of obscure, upcoming and huge acts - and quite a few no-shows along the way. And not a little technical innovation.

This year Gorrillaz stepped in when U2 pulled out after Bono needed surgery on his back, presumably injured by carrying his self-righteousness around for so many years. The very first Glastonbury also suffered a cancellation; The Kinks were booked but pulled out when they saw it was billed as a "mini-festival". The whole thing came about after dairy farmer Michael Eavis was inspired to stage a music event when he and his wife Jean (who died in 1999) saw Led Zeppelin at the Bath Blues Festival in June 1970.

Field Of Dreams

Eavis opened up a field on his farm in Somerset that September and billed the gathering as the Piltdown Festival. Despite being a newcomer to music promotion the farmer managed to contact Marc Bolan's agent and booked T-Rex for £500. This helped bring in 1,500 roisterers, who each paid £1.50 and got the bonus of free milk.

The first Festival lost £1500 but Eavis saw it as the best investment he ever made and carried on. This year's event sold out in October 2009 with 180,000 tickets snapped up. The whole thing has grown and sprawled over the years - more than one field is involved and there's no free milk, probably to the relief of Eavis' herd - and the founder has handed over most of the organising to his daughter Emily.

And while some purists object to the number of big name acts appearing, Glastonbury is still hugely popular. It's also played a part in the development of live sound technology. Tony Andrews was an aspiring loudspeaker designer when he went to the second Glastonbury Festival in 1971 with The Pink Fairies, who were part of an impressive bill that also boasted David Bowie and Traffic.

> "In total 64 Martin Audio W8L Longbow boxes were flown in 16-deep dual inner and outer suspension either side of the stage, with 64 W8LCs in four delay towers, which were synched using the SMAART acoustical measurement program."

Andrews had built a rig for the Fairies based on HH Electronics amplifiers but this blew up and the counter-culture band ended up using Traffic's WEM PA. Despite this small setback Andrews maintained his association with Glastonbury and in 1979 debuted the Turbosound Festival system there.

Up To Speed

Over the years Andrews and Glastonbury's organisers have had a lively relationship but the designer and his business partner John Newsham, who founded both Turbosound and current company Funktion One with him, were at Worthy Farm this year. Their systems were used in several of the dancey-trancey, left-field areas, including Arcadia and The Glade, which featured a six-way hexagonal Ambisonics surround system running through six Resolution 3 cabinets and six single 21-inch sub basses.

Andrews contributed to the music played in The Glade, with the sound system featuring a Prism Sound Orpheus FireWire computer interface as a "six-channel sound card" and routing by AudioMulch.

Bristol company Audio Funktion supplied rigs for The Glade and Arcadia, which are part of the outer-lying, fringe aspect of today's Festival, which also includes the Theatre and Circus areas. Adlib Audio of Liverpool provided systems for these stages: Nexo M3s and B1 subs, Adlib FD2 Hi Packs and DF415 basses and with Soundcraft and Yamaha consoles.

More familiar to general Festival goers are the John Peel Stage (named in honour of the late Radio 1 DJ who attended the first Glastonbury with Marc Bolan and was later part of the BBC team covering the event), the Other Stage and the Pyramid Stage.

Other-Wise

Newbury-based Skan PA Hire supplied equipment for The Other Stage, with a main rig of d&b audiotechnik cabinets, run front of house from two Midas XL4 desks. On the Pyramid stage RG Jones was the principal audio contractor, overseeing a Synco by Martin Audio line array system including left and right hangs provided by Capital Sound.

In total 64 Martin Audio W8L Longbow boxes were flown in 16-deep dual inner and outer suspension either side of the stage, with 64 W8LCs in four delay towers, which were synched using the SMAART acoustical measurement program. Sub bass was provided by a cardioid array designed by a Martin Audio team led by Jason Baird, which had to contain the sound and not let it leak into the village of Piltdown, only 1100 metres away.

On-stage monitoring was through a generic "house" system based on Synco dual concentric 15-inch wedges, with L-Acoustics ARCS sidefills and Synco STS drum fill. Front of house mixing was on a mixture of digital - two Digidesign VENUE Profiles and a Yamaha PM5D - and analogue, two Midas XL4s. Shakira's crew brought in a PM5000, while Muse were mixed through the band's own XL4, backed by seven racks of outboard gear.

> "On the day we just had to focus on the routing for each engineer's desk and it went seamlessly without any hiccups"

"On the day we just had to focus on the routing for each engineer's desk and it went seamlessly without any hiccups," comments Steve Carr, RG Jones' audio production manager and front of house engineer.

The incongruous relationship between Glastonbury - that usually quiet part of England with its spiritual and historical significance - and music and technology continues. The sun shone and people got sunburned. Apart from the men dressed in full 19th century British army red tunics, who probably suffered heat exhaustion. Still, eccentricity is what the UK - and its Festivals - seem to do best.

NUENDO 5

LEADING IN NATIVE AUDIO POST

steinberg
Creativity First

facts on steinberg.net

Gigi D'Alessio Invests in Duality

Among the ranks of the hardest working, home-grown Italian artists, none come much bigger than Gigi D'Alessio. For almost two decades his vocal talents have been in such demand that he's been known to sing at as many as a dozen venues in a single day.

So when he recently decided to build a new recording and mixing studio, he tasked Roberto Rosu with the project. For a decade now Roberto has been Gigi's right-hand man for all matters of recording and mixing.

"Yes, I oversaw the design of the studio – the equipment we use, the consoles that are central to everything we do here. Gigi's wish was simple – to create a beautiful studio that could accommodate all kinds of projects and requests."

With that simple yet effective brief in mind, Rosu had but one goal – to build "the perfect recording and mixing environment in the perfect acoustic space". With noted studio designer Francis Manzella of FM Design on board to take care of the design and acoustics, Rosu specified the equipment needed for this bespoke facility.

"We've installed a Solid State Logic Duality 48 and an AWS 900+, as well as two X-Rack set-ups and Alpha-Link/Delta-Link I/O interfacing. The reason I've picked so much SSL gear is because I think SSL equipment is the best available in terms of quality and price."

He continues, "Back in the 1980s SSL put access to the remote tape machine in the central panel of their consoles – an incredibly innovative move. And it also revolutionised the life of the engineer by putting a compressor and gate on each channel – and there's even one on the stereo output bus.

"Sure, these developments came about in the '80s, but in terms of contemporary revolutions then you need look no further than Duality and AWS 900. These consoles make a similarly huge leap forward in the field of music production. Putting DAW control right there in the middle of the control panel, right there at your fingertips… but you're still using the analogue processing… it's just mind-blowing."

"Duality has completely changed the way I work because everything is right there on the console. Plug-ins, editing, routing, transport controls… so when you are in session – especially during mixdown – almost all of your time is dedicated to the sound production. There's no more bouncing back and forth between the computer and the console. And it also means that you can spend all of your time with your head in the middle of the speakers, not off to one side so you have to listen with just one ear. Obviously you can get a similar experience ergonomically speaking by using a controller, but the sound… well, I'm sorry, but it's just not the same."

"There's no more bouncing back and forth between the computer and the console. And it also means that you can spend all of your time with your head in the middle of the speakers, not off to one side."

Aviom on Stage at San Remo Festival

Aviom helped with the performances at Italy's 60th annual San Remo Music Festival by supplying more than 25 A-16II Personal Mixers, via Sisme Spa, to the show's entire orchestra. Each year, the popular Italian song contest hosts musicians from all over Italy, who perform original Italian language pieces. The programme is televised, and the artists are ultimately judged by viewers watching at home.

One of the major challenges producers face when broadcasting this show is the use of different conductors during each performance, while the orchestra remains the same. To help maintain consistency between numbers during this year's festival, every member of the orchestra utilised the Aviom A-16II Personal Mixer (in previous years only the rhythmic section used the Aviom equipment). The 16 presets on each of the A-16II mixers proved to be an asset for musicians and engineers alike, allowing them to adjust their settings during sound check and save those settings for the live performances later each day.

"The remarkable audio quality and ease of use of the system gave the musicians an excellent monitoring signal," says Andrea Guerranti, Sisme Spa Technical Manager. "RAI technicians designed a simple and efficient audio network for the entire orchestra, which faces the daunting task of performing with several different musicians and conductors each night."

MEDIA MATTERS

Italy's heady blend of politics and media has made headlines inside and outside the country, with watchdogs and some politicians pointing to Prime Minister Berlusconi's influence over both public and private broadcasting.

The public broadcaster, Rai, has traditionally been subject to political influence, and Mr Berlusconi's Mediaset empire operates Italy's top private TV stations.

Between them, Rai and Mediaset effectively control Italy's TV market and are a potentially powerful political tool.

A media law, passed in 2004, heralded the creation of new digital TV channels and the partial privatisation of Rai. Critics said the bill reinforced Mr Berlusconi's hold on the media.

Rupert Murdoch's News Corp secured a virtual monopoly of the pay-TV sector when it launched Sky Italia in July 2003. The service was created through the merger of existing pay-TVs Stream and Telepiu.

Around 2,500 commercial radio stations broadcast in Italy. A few of them have national coverage; most are music-based. They share the airwaves with public broadcaster Rai's radio stations.

Outline Factory Switches on Solar Power

Outline now manufactures a third of its loudspeaker systems with the help of the sun. A few months ago, a modern amorphous silicon photovoltaic system for the generation of clean energy was installed on the roof of the Brescia loudspeaker system manufacturer's premises.

"Approximately a third of the energy necessary for building our loudspeaker systems is provided by this photovoltaic system," says Outline's Stefano Noselli. "We're at the beginning of the road but are rightly proud. The aim we're determined to achieve by 2015 is to considerably reduce the energy consumption necessary for our activities by means of a series of projects that have already been planned for some time."

In sync with the concept of maximum efficiency and respect for the environment, Outline and its R&D department have built up an expertise enabling it to achieve ambitious objectives, only possible thanks to the use of innovative technologies and materials.

Outline moved to water-based paint and recyclable packaging 20 years ago with advantages for both . The paint used on Outline enclosures has the best performance in terms of resistance, ease of use and durability, says the company.

Another aspect that contributes to making Outline an "environment friendly" company is its highly localised production.

Outline decided to manufacture in Italy back in 1973. From the smallest details to material for the (in-house) pressing of the metal diaphragms for high frequency reproduction, the majority of the firm's suppliers of semi-finished components are a short distance from the company's headquarters or at least in the Lombardy Region.

VITAL STATISTICS – ITALY

FULL NAME	Italian Republic
CAPITAL	Rome
MAJOR LANGUAGE	Italian
MONETARY UNIT	1 euro = 100 cents
MAIN EXPORTS	Machinery and transport equipment, chemicals, clothes, wine
GNI PER CAPITA	US $35,240 (World Bank, 2008)
INTERNET DOMAIN	.it
INTERNATIONAL DIALLING CODE	+39

Yamaha System Enhances Palermo's Mambo

Despite the financial constraints that most companies are finding themselves in at the moment, many different types of venues are investing in Yamaha audio solutions, just one of which is Sicily's Mambo Wine Bar, the company reports.

Located in the Isola delle Femmine province of Palermo, Mambo Wine Bar combines sophisticated internal décor with stunning views of the island's dramatic north coast.

Enhancing the ambience is a Yamaha audio system, which is also giving the venue a significant audio advantage over a neighbouring club.

The bar's owners wanted a high specification audio system whose quality would be the perfect complement to both the high quality surroundings and exquisite coastal views. Having examined a number of different options, they chose the Yamaha system proposed by design and Palermo-based installation company Decibel Pro.

"The Yamaha system was not the least expensive option, but it was highly cost-effective in terms of the quality of the audio and equipment. This was the main factor in their decision to choose Yamaha," says Decibel Pro's Vito Priolo.

"They also have absolute trust in our knowledge of the best systems and we knew that Yamaha would deliver quality and, importantly, reliability in the challenging, salt-laden atmosphere of a coastal venue."

Turin University Gets QSC System

The Università degli Studi di Torino (University of Torino) is one of Italy's leading public Universities with an international reputation for high quality teaching and research. With its 13 Faculties, 55 Departments, and approximately 70,000 students, it is one of the largest in Italy.

Although the Rettorato (Chancellor's Building) at the Palazzo dell'Università – which houses the entire administration – occupies an architecturally-magnificent building with a historic quadrangle that dates back to the mid-1700s, the University was originally founded in 1404 by Pope Benedetto XIII, making it among the few of European Universities to boast a medieval origin.

Recently the Rettorato's great hall, and main assembly room underwent a complete AV fit-out. QSC Audio components were chosen for the sound reinforcement and signal transport following competitive evaluations.

Technical Manager Antonio Caprioli says the requirement was for a system that could transparently reproduce a wide programme of events, from full orchestral recitals to Honorary Doctorate presentations and conferences, in which delegates would be speaking through eight gooseneck mics to audiences of up to 250. Evenly-dispersed sound needed to be distributed in an uncomplicated manner, across the floor and up to the raked seating area.

QSC RAVE 520uz and 522aa network devices, operating under QSControl.net, were specified for control. This would enable multi-channel audio to be run over CobraNet, with low latency and high sampling rate.

Six QSC ISIS I-282H loudspeakers, with rotatable waveguide, are spaced evenly down either side of the room (with two delay taps set into the system processor). The sound reinforcement system is powered by three QSC Audio RMX 4050HD amplifiers.

Summarising, Antonio Caprioli says, "The sound is a good deal superior to what we had previously with a high degree of intelligibility. The fact that we can have two scene presets gives us further flexibility for changing the desk positions."

The Iron Man

There's always something to be said about going back to basics. Get the room right, the people right, and the service right, and things might go your way. TIM GOODYER talks to Ironworks' Mike Pelanconi.

At 36, Mike Pelanconi regards himself as having caught the 'last wave' of the old school of studio engineers and record producers. He began in the London studios of the late nineties, learning as he went. "I started working for record labels direct,' he recalls. "As sessions moved around a lot more in those days between different rooms, it was a great opportunity to learn new sounds, meet people, and develop techniques such as multi-track tape editing and old microphone techniques that are often overlooked now."

Between his passion for music and recording, he built an enviable career as an engineer, mixer, and producer, and had the opportunity to work with a particularly wide variety of artists. Ably covering pop, reggae, rock, and other genres, he can count Blur's Graham Coxon, Gregory Isaacs and Dub Syndicate, Manu Chao, and Lily Allen among his many credits. He has also established his own recording career as Prince Fatty, working with some of the finest purveyors of Jamaican grooves to be found. He is the man behind the Drumdrops series of drum track recordings but, most recently, he has opened up his Ironworks studio as a commercial venture.

In The Works

Set in Brighton – Pelanconi's hometown – it is part of the Miloco studio group and boasts one of the finest collections of classic analogue recording gear, outboard, and keyboards around. Having found a suitable building he pulled in a former Olympic and Chalk Farm Studios tech to oversee the acoustic design. "I knew the sound would be perfect because of the room dimensions," he says. "I like to record everybody together as much as possible, so it's crucial to have a well-balanced live room. Mike [Craig] started at Olympic in the sixties, and has witnessed the studio evolution from valves and mono to the present day. We have worked together for a long time, so he understood what I wanted. He also looks after and takes care of all the equipment. The design and dimensions of the control room were inspired by Capitol Studio B and the old Hollywood Sound Recorders where Parliament and many cool seventies artists recorded."

The studio is based around a custom 28-channel vintage BBC Class-A console, Ampex M1200 16-track two-inch and Studer A807 quarter-inch tape machines, and a Pro Tools LE rig (Apogee and Metric Halo convertors), with monitoring over Tannoy Golds and Yamaha NS10Ms. "The desk has huge headroom and distorts beautifully when you want it to," he says. "I have had it since the early nineties but it took me a while to realise how great it was, as it was in my demo studio for a time."

Similarly, the discrete electronics of the Ampex M1200 and low-end performance make it his preferred choice for multi-tracking, even if the tracks are subsequently transferred to Pro Tools. "At 15ips it has a boost of 4dB at 35Hz, which is why American records of the seventies had a better low end than British ones,' he says. "The classic Studer machines used in Europe actually roll off the bass below 80Hz.'

Ironworks' outboard list also reflects Pelanconi's love of analogue and vintage electronics, including Chiswick Reach, EMI/Chandler, and Urei dynamics processors; API, Langevin, Massenberg, Summit, and Tube Tech EQs; and an extensive collection of reverbs of all kinds, from a Dynacord Echocord Tube Tape Echo and EMT 240 plate to AKG, Fairchild, and Grampian springs to MXR and Ursa Major digital units. And Pelanconi is the man to get the most out of them… "For me, the best equaliser for general

work is the API 550a. It's very musical and I have ten of them. For surgical purposes the GML is unbeatable, and for vibes and huge bass boost the Lang PEQ2 is the undisputed champion."

In Session

Recording with Peloni is not all about gear. He places great value on musicians' talent and has a particular view of his role: "When I'm in the studio, I want to feel like the weakest link in the chain,' he explains. 'I want to feel like… 'these guys are great and if I don't do something good, I'm in trouble'. I don't want to be the guy who has to bring everybody up, I want to feel I've got to be wise to keep up."

If his upbringing was in and around the major studios of London's heyday, he is certainly not predisposed to sing their praises, quoting badly maintained equipment and poor service as the principle reasons. He is similarly critical of record companies for their wasteful ways and reluctance to recognise the value of talented musicians. "I've seen £150-a-day guitar amps lined up in studio corridors," he laments. "Just sat there for months without being used."

He also feels that many engineers and producers have lost sight of the creativity that once set the British recording scene at the front of the pack: "It's sad, but 90% of people record in the same way now. I think that's one of the reasons people don't buy music any more – we've turned them off it. Creativity pays – I honestly believe that, even if it's not in the way that you expected."

The problems confronting record companies he regards as a good thing, however: "Publishing companies have to be the record companies of the future just like they were in the fifties. Nobody's going to invest money in music if the don't own the publishing rights. The destruction of the old music business can only be positive. From the ashes a cleaner and leaner business model will be born."

INFORMATION

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KMR AUDIO

sE ELECTRONICS GEMINI 5

Valve & FET Microphone

SIMON TILLBROOK always has high expectations when it comes to SE microphones – will the latest Gemini 5, with both FET and tube mics in a single case, live up to them?

SE Electronics has built itself quite a reputation for producing a range of quality microphones on a very attractive budget price level. Over the last ten years, this range has not stopped growing, both in number and the diversity of transducer options on offer.

In more recent times, it has been the higher end of this extensive line-up that has seen the greatest growth. With Rupert Neve collaborating with sE on a signature series, and the success of its Gemini range, sE Electronics continues to put temptation in our way.

In the latest wave of microphone releases from sE Electronics is an addition to the Gemini line in the form of the Gemini 5. This is a first in the world of microphone releases in that the Gemini 5 is both a valve and FET microphone all in one. The big appeal of this,. of course, is that you can track boths outputs at the same time. In theory, it's the best of both worlds...

Overview

The sE Electronics Gemini 5 is slightly smaller than its full valve cousin the Gemini II, about 20-30% smaller overall, but shares the dark grey and silver appearance with pierced rear vent.

The reduction in size is possible due to the fact that the Gemini 5 has just a single valve rather than two like the Gemini II. This single 12AX7 glows behind the rear cooling vent.

The sE Electronics Gemini 5 shares the same capsule as Gemini II, which has a 27mm diaphragm and a cardioid polar pattern. It is connected to its power supply via an eight-pin cable, and a quick glance over the PSU is where we find what really interests us about this microphone. The eight-pin connector sits centrally on the Gemini 5 PSU, and is flanked by two XLR microphone outputs labelled Tube and FET.

Within the Gemini 5 PSU we have an output transformer that is the same design used in sE Electronics 3500 microphone as well as the FET amplifier. These two output amp stages feed their respective XLR output sockets.

The Gemini 5 kit comes in a flight case that contains the microphone, power supply unit, eight-pin cable to link the two units together, mains IEC power cable, and full suspension cradle.

A Solid Set-Up

Setting things up you notice the solid build quality that we associate with an sE Electronic microphone, particularly of this level. The Gemini 5 screws into the base of the weighty suspension cradle and the eight-pin multi-core screws into the microphone. The whole setup feels robust, and once powered up I left the microphone for about thirty minutes before each use of it.

With both Tube and FET outputs from the Gemini 5 PSU connected you can easily switch between them for comparison. With identical signal flow paths and gain structures for each within the studio area, minus any sound source, you get a feel for the different colours that the two output options provide.

The Tube output has slightly higher self-noise levels, as you would expect, at 18dB (A weighted) against the 16dB of the FET output. In terms of sensitivity, the sE Electronics Gemini 5 specifications show that from the Tube output we have 25.1mV/Pa, and from the FET 31.6mV/Pa, and maximum SPL levels of 130dB Tube and 128dB FET.

On Test

Over a couple of days I enjoyed using the Gemini 5 on a few test sessions. I maintained the same signal flow chains for both outputs to get a real sense of what each was capable of delivering in relation to the same sound sources.

A variety of percussive, stringed, and amplified sources were used along with both male and female vocals. I wanted to collect a good amount of data to understand the sonic and dynamic options possible.

The Tube output from the Gemini 5 produced a smooth rounded tone but without losing any of the detail. Distortion in the lower midrange was very usable with such low inherent noise levels. The highs were in no way harsh, but present and defined. If you have experience of the Gemini II, this will all be familiar to you.

The FET output has a crisp clarity to its sonic signature throughout the frequency spectrum – clear definition with minimal colouration. Certainly there is a sharper edge to the tonality, but again without any hard or harsh aspects to spoil it all. The sound is thinner but not weedy or lacking depth, a versatile clean capture.

There is a slight high end lift in the frequency response curve of the Gemini 5 running from 5-15kHz, peaking at around 10kHz which across the range of tested signals adds that little bit of scene to the sonic picture.

Conclusion

The sE Electronics Gemini 5 delivered more than I expected. I have come to have high expectations whenever I receive a microphone from SE, and that is a testament in itself to the consistent quality it delivers, and the Gemini 5 continues this trend. For sE, it's intention was to give more for the same amount of money, and in this it has certainly succeeded.

The Tube and FET outputs are very different of course, but both excellent in the sonic palate they provide. The big advantage is that you can choose between them, or mix them as required, all from a single microphone, at the same time.

The Gemini 5 is a welcome and versatile addition to the Gemini series of microphones from sE Electronics, and as always represents very good value for money.

INFORMATION

Ⓕ **GB£800.00 (exc.VAT)**

Ⓐ **sE Electronics (Sonic Distribution)**
Unit 23, Westbury Close, Townsend Industrial Estate,
Houghton Regis, Dunstable, Beds, LU5 5BL
Ⓣ **+44 (0) 845 500 2 500**
Ⓦ **www.seelectronics.com**
Ⓔ **sales@sonic-distribution.com**

THE REVIEWER

SIMON TILLBROOK is the Principal Music Tutor at Islington Music Workshop in London. The rest of his time is spent as a freelance engineer, mainly in the USA.

SE ELECTRONICS GEMINI III

Special Edition Microphone

To celebrate SE Electronics' 10th anniversary, the company has decided to release a special limited edition of the well-regarded Gemini II microphone in the form of the Gemini III.

The Gemini III is the first anniversary product to appear from SE Electronics, and others are promised in the coming months.

Opening the flight case, you are presented with a wooden box in which we find the microphone. The Gemini III is finished in a matt black rubberised finish, and on the front we see a small silver plaque with the SE Electronics 10th anniversary logo.

Along with the full suspension cradle, multi-core, and power cables is the power supply unit that illustrates the one main difference of the Gemini III over the Gemini II, a multi-pattern rotary selection control. This multi-position control selects from omni through figure-of-eight through to cardioid.

The Gemini III has exactly the same dual valve electronics as the Gemini II, but to accommodate a figure of eight polar pattern the Gemini III is fitted with a dual Gemini capsule.

The addition of the variable pattern selection just makes an already great microphone that little bit more flexible in the studio. The figure-of-eight polar pattern is very good indeed with great side rejection, and even delivery from both diaphragms.

Everything else about the Gemini III translates perfectly from the Gemini II in terms of its sonic capabilities.

CONCLUSION

With a limited production run of just 333 units the SE Electronics Gemini III will not be available for very long, and those able to acquire one will love the additional possibilities offered up by the variable polar pattern selector.

INFORMATION

£ Gemini III – GB£1,350.00 (inc.VAT)

"With a limited production run of just 333 units the SE Electronics Gemini III will not be available for very long, and those able to acquire one will love the additional possibilities offered up by the variable polar pattern selector."

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PRESONUS FIRESTUDIO MOBILE

Portable Recording Interface

It's a cluttered interface market, so SIMON TILLBROOK sets out to uncover what will set PreSonus' addition to the field apart.

THE REVIEWER

SIMON TILLBROOK is the Principal Music Tutor at Islington Music Workshop in London. The rest of his time is spent as a freelance engineer, mainly in the USA.

Portable recording interfaces for use with bespoke and established DAW software seem to appear almost weekly at times. How can any manufacturer introduce a product in this already over crowded market and make it stand out in some fashion?

PreSonus produces a wide range of interfaces and is as such well placed to give us something with that little bit extra. The latest interface that we are to be temped by is the PreSonus FireStudio Mobile.

Overview

The very compact 5.5x1.75x5.5 inches (139.7 x 44.5 x 139.7mm) PreSonus FireStudio Mobile is a Firewire interface for use with the supplied Studio One Artist workstation software, though it works with any audio software that supports ASIO or Core Audio. Boasting an impressive ten inputs and six outputs and capable of resolutions of up to 24-bit/96kHZ, the PreSonus FireStudio Mobile can be either bus powered via six-pin Firewire 400, or by the

supplied 12V DC external power supply.

Looking over the front panel, we have the first two inputs accessible via two combination sockets. Here we can plug into either the two class A PreSonus XMAX microphone preamplifiers, or the two HiZ quarter-inch TS instrument inputs. Each of these inputs is controlled from the two rotary gain controls with dual concentric scales for mic and instrument.

Microphone preamplifier gain runs from -10 to +70dB, giving a full 80dB of constantly variable gain. We have the same gain range of 80dB when it comes to the instrument inputs, but in this case the scale goes from -30 to +50dB.

The two microphone preamplifiers of the PreSonus FireStudio Mobile can be supplied by a full 48V of phantom power even when bus powered, and a single 48V button supplies this to both simultaneously.

Either side of the phantom power button, we have three-segment LED meters for the two inputs. These LEDs indicate -40, -6, and 0dBFS (-30, +4, and +10dBu).

A headphone output with an associated volume control (that goes to 11) and a main output level rotary pot with a range from -80 to 0dB complete the control set on the front of the PreSonus FireStudio Mobile.

A Firewire logo in the corner lights blue to inform you that the PreSonus FireStudio Mobile is synced via Firewire or external S/PDIF. Flashing red indicates no valid sync present.

Around Back

Flipping to the back we find an array of connectivity. Beside the power adapter input are two six-pin Firewire 400 sockets. Using a four-pin Firewire 400 cable would require the need for the external power supply. There is a nine-pin breakout cable connector that gives you access to both MIDI input and output, as well as S/PDIF input and output. I guess that a breakout connector was used because of the small enclosure.

The second half of the rear panel of the PreSonus FireStudio Mobile contains a number of balanced TRS sockets. Two of these are for your main left and right output, and the final six sockets are line level inputs that can accept a maximum input level of +10dBu (equivalent to 0dBFS).

Installation of the Studio One Artist DAW software (which is supplied for both Mac and Windows machines) was simple, and the interface is familiar and quick to use. I did not go into the software too much, but for simple recording and mixing I found the system to do everything I required of it with no drama.

Quality And Possibility

What struck me about the PreSonus FireStudio Mobile was the build quality. The metal cased unit would stand up to general mobile use without any problems I am sure. The solid feel of all the rotary controls, and the solidly mounted connectors throughout was reassuring.

The array of connection possibilities on the PreSonus FireStudio Mobile is one thing that does give the unit a little edge. Using them along with the Studio One software worked well in a variety of configurations with manageable latency each time, an issue we all experience with Firewire/USB interfaces.

The manual supplied with the PreSonus FireStudio Mobile is well written and helpful when it comes to connection installation possibilities and operational basics, working tips and tricks. There is a great deal of information for such a small compact device.

The quality of the PreSonus XMAX preamps is very good indeed for such an interface, proving crisp results with great clarity. The principal thing for me was the huge gain range offered by them. One advantage, I guess, of using such high voltage power rails within the unit. This gain structure was also reflected when using the headphone amplifier. I cannot see anyone wanting for more volume in this case.

The PreSonus FireStudio Mobile will attract people because of the high number and variety of inputs and outputs available on the interface. I cannot think of another interface this compact that offers as much. This, coupled with the large gain range, puts the PreSonus FireStudio Mobile in a strong position in such a cluttered and competitive market.

INFORMATION

£ GB£233.91 (exc.VAT)

Ⓐ PreSonus Audio Electronics Inc., 7257 Florida Blvd., Baton Rouge, LA 70806, USA
Ⓣ +1 225 216 7887
Ⓦ www.presonus.com

Ⓐ UK Distributor: Source Distribution, Unit 6 Pembroke Buildings, Cumberland House Business Park, London, NW10 6RE
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With the 2010 Develop Conference Audio Track upon us, *Audio Media* has put together a host of game-sound articles especially for the event. Whether it's music or FX, action or ambience, platform or fire-power that floats your boat – or even if it's all of them – we've got it...

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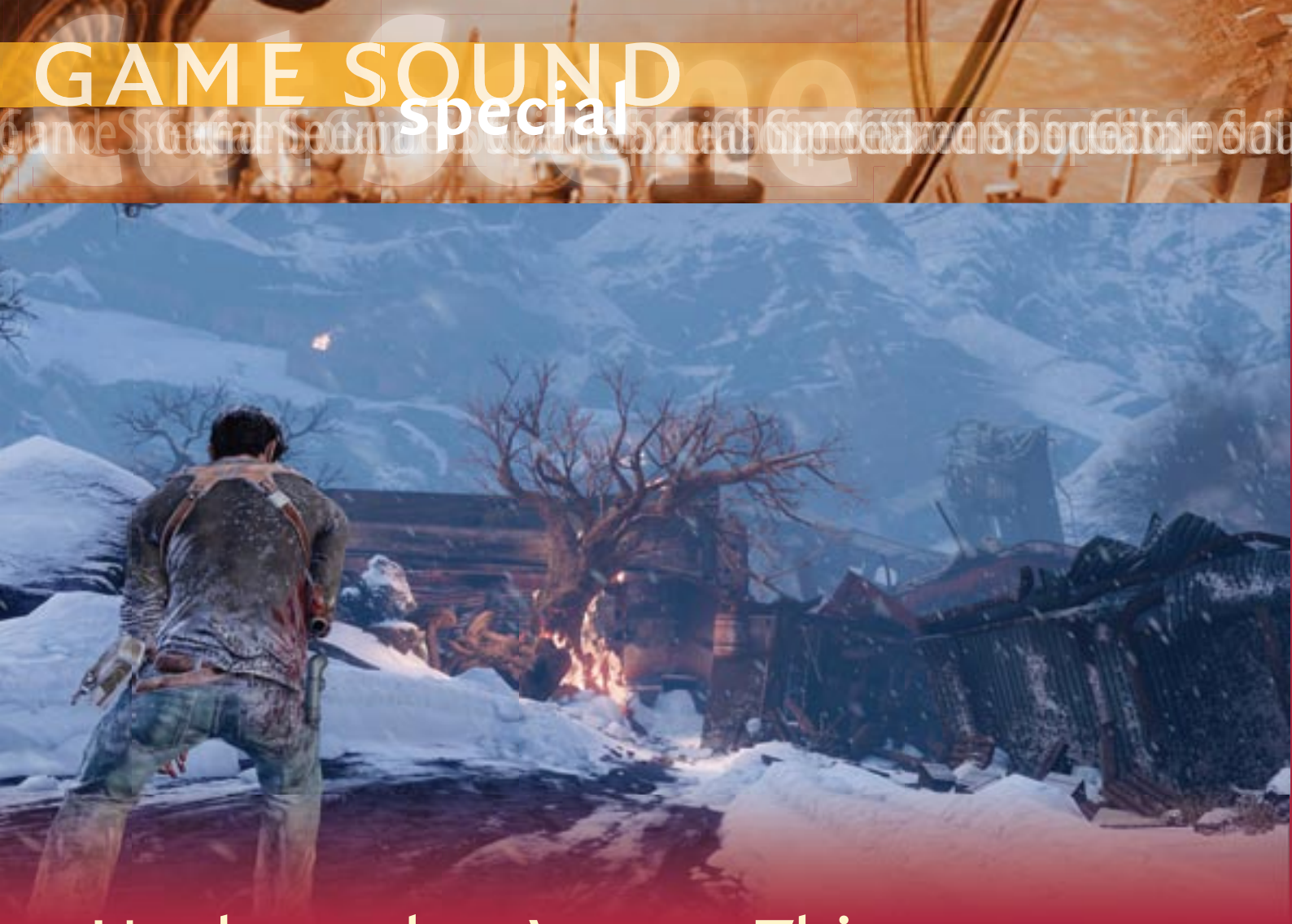
34 Dialogue: Barney Pratt, Supermassive Games



Uncharted 2: Among Thieves

John Broomhall reflects on an epic videogame production with Bruce Swanson (Audio Director) and Phillip Kovats (Lead Sound Designer)

Uncharted 2: Among Thieves from acclaimed US developer Naughty Dog is a blockbuster videogame that has so far notched up in excess of 3.5 million sales. Packed with compelling drama from the very first moment, the main character awakes to find himself in a train wreck dangling precariously over a cliff. As metal creaks and groans accompany alarming jolts, the only life option is to climb out and up several carriages amidst jaw-dropping scenery presented with vertigo-inducing camera angles – surely, one of the most exciting starts to a game ever. And so an epic action-adventure begins, accompanied by a beautifully pitched soundtrack developed over some 20 months by Naughty Dog's crack internal audio team headed by Bruce Swanson, supplemented by Sony Computer Entertainment America's PD Services Group with SCEA's Phillip Kovats embedded in the dev-team throughout.

Testament to their skills is a double awards whammy with *Uncharted 2*'s music, sound and dialogue scooping up both of BAFTA's audio-centric game awards - Original Score and Best Use of Audio. For Swanson and Kovats, there had been an inkling they were into something special early on.

Kovats: "Naughty Dog is a little unusual in that there aren't producers pointing their fingers and saying 'do this'. Studio President, Evan Wells runs the show with Creative Director, Amy Hennig, and Game Director, Bruce Straley, and they're very iterative in their process. They want people to put their heart and soul into the project to achieve something remarkable - and that's how it went down." Swanson: "This was a great team all of a like mind – self-starting, self-modulating people aiming to do their best the whole time. Somewhere along the way I looked at what the team was producing and realised this game was gonna really blow up (in a good way)!"

Is It A Game, Is It A Film?

Swanson describes *Uncharted 2* as 'a game that thinks it's a movie and a movie that thinks it's a game'. Certainly the title feels very filmic in nature with the many hours of live game-play action punctuated by 90 minutes of cinematic-style scripted sequences and 540 short IGCs (in-game cut scenes) – small vignettes which advance the story or tactically inform the player. So when it came to audio, seamless continuity was a key objective. Swanson: "We let the in-game ambient sound continue to play through the foreground set piece movie mixes and that really helps – visually you can't tell a difference between in-game and cut scene, and we didn't want the ambiences or music to bump and break the spell. That meant making sure our tech would allow music to trail into a 'cinematic' and exit out smoothly once you're back in the game. With movies and TV, focus is everything in sound and it goes even further in games. Not only do you want to focus attention but also to provide information – sometimes strategic information needed to play the game better…"

(1) Drake's Core Boon

According to Swanson and Kovats the absolutely vital ingredient to enable delivery of their audio vision was access to great game audio technology and so for them, a project kingpin was audio programmer, Jonathan Lanier who coded a proprietary audio engine to work with Sony's Scream technology that would manage and play back sound. It was a ground-up design for optimum exploitation of Playstation 3's technical capability, using a data-driven methodology to minimise the sound designers' reliance on programmers to implement their work. Kovats: "I can't stress how important it is to have a dedicated audio programmer - it's about getting the sound to behave properly in the context of the game environment – not just a ▸

matter of making waves and having somebody stick them in. Jonathan made the basic audio engine infrastructure really extensible so we could return time and again for new features. He in turn would expose the controls of those features to us in our virtual mixing application. We were able to make changes and hear them in the game rightaway enabling really fast tweak iterations. One example was where we weren't happy with the sound of reverb fall-off, so he coded a hack to make it more reflective with distance. He also built his own models for occlusion and obstruction of 3D-positioned sounds."

This rapid fine-tuning ability effectively allowed Swanson and Kovats to mix the game as they developed it. Sounds would be organised into logical groups like pre-dubs with run-time DSP effects such as reverb, eq filtering and compression available per sound or per group. This meant their 18-hour final mixing marathon was mostly about balancing stemmed sub-mixes. Swanson: "From a philosophical standpoint, we try to keep as many things as dynamic as possible, for instance we have a little feature that allows us to decide on the microphone ('listener') position – is it pushed all the way to the player or is it with the camera or somewhere inbetween? We can adjust it per sound – it's just one of a matrix of sound attributes. To some extent, once these are set, the game kind of mixes itself."

However, technology considerations didn't rule the roost and the mix systems could be overridden at will when the drama required, as Swanson points out: "We have to constantly remind programmers we need to break their systems if they limit creativity! We're telling a story and it doesn't really matter what 'real' is. Kovats: "We could do overrides based on any game data we wanted to hook into to underpin or create a dramatic moment like a big fader move or sudden DSP effect on a group. One thing that was very significant about this audio team is we all had a movie or TV post background. Given the nature of the game we wanted to work in a very filmic way. Part of that was wanting to add dynamic range into the mix and have it breathe. We tried very hard to let things sit and be quiet where appropriate - or be loud where needed – but have good focus. We came at that early in the process – there was a lot of intent with the mix as we progressed through the development."

Scriptly Speaking

Meanwhile, one facet of the audio that has received particular praise in some quarters is attention to detail in the dialogue. Kovats explains why: "The actors really dug down into those characters. Amy (Creative Director) worked very hard on that and people say they love them. Not only did she get great recorded dialogue performances from the motion capture and ADR sessions but she also went back afterwards looking at video captures of gameplay with the actors and had them ad lib – both tailor-made specific emotes for, say, an effort sound through to funny one liners. That was great because it was so fresh and really fitted each moment, though it was tough to retro-fit into the game." Swanson: "We're always trying to push the contextual nature of the speech. We don't like it when a game character says something that doesn't make much sense. It takes you out of the experience. We want the NPCs (non-player characters) to be responding to their environment and game events as well as the principal characters."

Team Effort

No single person was in overall charge of audio, as Swanson says: "When you have projects as big and multi-faceted as Uncharted, a good deal of delegation has to happen. With dialogue, creative decisions rested with our Creative Director, whilst we handled the logistical and technical aspects of the speech. She also carried the vision as to music, working directly with Sony's music service group and composer Greg Edmonson. Again our involvement was on the technical side creating an adaptive music system that could cue Greg's stuff in a way that was really dynamic and responsive to game events - and again, very cinematic. The Sony guys handled all the editing and set-up of interactive replay working with multiple music layers and stingers.

"Overall, dozens of people have touched the audio in some way or other – whether an in-house sound implementer, guys tagging animations, dialogue editors, the crew at Technicolor working on the cinematics and foley or the music engineering team at Skywalker. Along with our partners in Sony we are very careful about who we task with what and we ensure everyone's on the same page. Then we let it happen organically unless there's a problem and obviously my role entailed a lot of influence on the overall blend and mix of elements. Kovats: "There was great communication and whenever necessary we'd get in a room and hash stuff out to create new ways of overcoming the challenges the design team were throwing at us. At no point would we allow anything to sound janky or out of place." Swanson: "I remember one time going to Evan's (the studio president's) office and telling him 'If we keep changing and adding stuff, I just don't know if we can do this'. He calmly looked at me and said 'well dude, we're not going to stop making it more awesome'. We left his office and figured it out. A good example would be the decision to do more on-demand loading of sounds on a granular level rather than being totally tied into the game's overall loading points of large level chunks. This helped significantly with tackling memory constraints more flexibly." Kovats: "Naughty Dog were pushing the PS3 to its utter limit right up to the end of development."

The audio team also had to work closely with the other game development disciplines, most notably physics and AI programming as Kovats explains: "Audio was the canary in the coalmine in some instances - like when we had NPC enemies firing at the player in an annoying loop – they would empty a whole clip and take cover, empty a whole clip and take cover ad nauseum. It sounded terrible but actually AI was the problem that needed fixing. Swanson: "Yeah, it's interesting – the eye can actually be more forgiving than the ear and you'd have someone say 'hey there's a problem with your sounds' but the underlying issue might be the physics or AI programming…

In Retrospect...

"Naturally, on a project like this you have to be ready to change your priorities and accept that you're not going to do everything you want. There are some things you'd like to do better and some that miss the boat altogether. But provided you're aiming as high as possible and getting the most bang for buck in the situation you're in, by the end of the day, there's enough good stuff in there that you win. I'm really happy about the player immersion – we keep the player in the ride both visually and audio-wise the whole time. Kovats: "I completely agree and to me it evidences how well we worked together as a team. We kept our heads above water, working out the issues day after day; we stayed on target and didn't get lost in the sheer immensity of the title."

There's little question that in many respects *Uncharted 2: Among Thieves* has laid down a benchmark for game audio quality. Meanwhile, Naughty Dog is hard at work on its next barnstormer, and given the team's passion and professionalism, it's bound to be another winner.

20 Years... And Beyond

One issue after Audio Media's 20th Anniversary, Dan Bardino (Creative Services Manager for Sony Computer Entertainment Europe) glances at where games audio has come from, and peeks at the future.

It's all bleeps and bloops, isn't it? Oh, how the game audio fraternity (and sorority) laughed! But the abiding image amongst many sound pros, certainly until the last five or so years, of their new media cousins was probably not too far from this.

The games industry is so young that 20 years ago there were only a handful of people making audio for video games. It was a highly technical process of synth programming; writing code for both sound effects and music. The technical genius of those early pioneers was never doubted, but what's less appreciated is the creative nous and desire to push boundaries it often took to make such memorable and affecting music and effects through such an incredibly painstaking process... Remember SID?

The mid 90s saw the first big leap in game audio possibilities with the introduction of CD-based gaming, allowing CD-quality audio storage for the first time in mass market games but still the delivery technology was incredibly limiting – for one game we were still trying to fit all of the sound of London, gunshots, car engines, foley, physics effects, and even music into just 2MB (12 seconds of CD-quality stereo music) as recently as five years ago.

Obviously this requires some pretty complex systems that deal with two of the most fundamental differentiators of game audio – namely, interactivity and memory constraints.

The user controls the interactive action so systems must react to any given input, and there's only a finite amount of memory to store the audio for these big, open world games.

So, the pioneering spirit of those early days continues apace; the lessons learned of creating extraordinary soundscapes with the most frugal resources are now assisted by the exceptional computing power of the modern home console allowing professional quality DSP to run real-time adjusting the mix according to the action – whatever that action may be.

For me the most exciting thing about game audio is that pioneering desire to push things forward coupled with the nascent industry's lack of prescribed boundaries, allowing the sound professional an amazing scope of creativity and, for me, the most exciting possibilities for audio as an entertainment medium.

In the next five years we will see game audio push the boundaries of what is creatively possible with immersive interactive surround sound and sound developer crafted procedural audio amongst other areas and, as games become more and more part of mainstream culture, some of the more constraining prescriptions of other mediums will start to fall away as the audience that has grown up on games become the audience, directors, and commissioners of TV and cinema.

So, is it still just bleeps and bloops? Well, I write this in the week that the first-ever Ivor Novello has been awarded for a video game score, and if the Ivor's are recognising the leaps and bounds game audio has made over the last 20 years, perhaps that old joke might just die after all. AM

Games – A Serious Business

TIGA is the trade association for the UK games industry with over 160 corporate and education members (paid and affiliate). But where does a TIGA sink its teeth? PAUL MAC finds out.

Dr Richard Wilson is the CEO of TIGA and spells out a very clear mandate: "Our purpose is to make sure that the UK is the best place in the world to do games business.

"To that end we lobby governments and parliament, both in Westminster and Hollywood, to introduce legislation and take measures that help our sector; we work to raise the media profile of the video games industry, put the industry in a good light, and dispel the myths that are sometimes propagated about our industry. Thirdly, we have a range of benefits and services to help our members to be more competitive. We also work to help to ensure skills and qualifications are fit for purpose."

Richard Wilson, TIGA CEO, at Number 10.

A big issue of late has been the subject of tax relief for the gaming industry – something like the UK film industry enjoys. At the moment, Canada is leading the world with its own generous developer incentives. Despite promises (*AM* April 10, CutScene), it seems there is still a battle to be fought. Wilson: "We managed to get into the budget in March, under the last government, which we were very pleased about... Before the general election, the Scottish National Party and the Labour party included a provision for games tax relief in their manifestos, and the Lib Dems and Conservatives said they supported games tax relief. In fact, the Conservatives said they were going to introduce a games tax relief in their first budget. Unfortunately that didn't happen.

"However, we do have supporters in both the Lib Dems and Conservatives party who are sympathetic to the video games industry and to tax relief, so we're not going to give up on this. This is a longer battle than we had hoped we were going to have to fight, but we do believe ultimately that we will be successful."

TIGA recently organised a coming together of film/TV and game audio practitioners at Pinewood studios (*AM* March 10, Cut Scene), chaired by Dennis Weinrich (MD, Pinewood Film and TV Post). It was widely heralded as a success by all attendees. "It was definitely worthwhile," says Wilson. "It was even more successful than we had anticipated... There was a good cross section of experts in both sectors."

So what were the main lessons? Wilson: "In both sectors, people face important challenges – integrating all the audio work into the production process... the battle to ensure that audio for both film and games gets sufficient funding... The other thing that came out was that the quality of games audio was perceived to be on a par with audio in the film industry."

"We'd like to do something similar in the future. I think the principle of trying to put people from creative sectors in touch with each other, and to do that in quite a specialised way, is enormously beneficial for both.

Wilson summarised the next 12 months at TIGA thus: "In a nutshell, our top priorities are getting engagement, raising the media profile, and developing services for our members... Our strategy is clear – it's making the UK the number one place to make games in the world. The only thing that varies is how we deliver the strategy, and I hope over the next few months we'll see some more interesting developments." AM

www.tiga.org

All In The Mix

Audio Track chair JOHN BROOMHALL checks in with leading practitioner Garry Taylor ahead of his presentation at this month's Develop Conference.

In his role as Audio Manager for Sony Computer Entertainment Europe, Taylor is a man with the privilege and responsibility of helping to define the future of PlayStation audio. His perspective on the state-of-the-art arises not only from a great deal of hands-on work and audio oversight of such leading titles as *24*, *Heavenly Sword*, and *LittleBigPlanet PSP*, but also from a collegiate discourse with his top flight Sony audio production cousins around the globe.

Towards the end of the last game console hardware cycle, before PlayStation 3 was released, Sony asked PlayStation.com users about their audio set-ups. The results surprised Taylor: "Over 50% of respondents were listening in surround. This will certainly have increased by now and players expect today's titles to sound as good as their DVD movies – especially the blockbuster games that present a cinematic-style experience." Which is perfectly possible, although the mixing of game soundtracks presents its own challenges and opportunities. Taylor: "We have to be acutely aware of the potential for ear fatigue when dealing with, for instance, gunfire that may be heard for very long periods in a first-person shooter. We're taking the player on a journey and that experience needs light and shade. Also, mixing approaches are bound to vary from those of linear media given that in games, you're often using audio to signpost the game-world and what you can do within it. You just don't have that kind of functionality in movies. Games are immersing the player as protagonist (as opposed to passive viewer) at the heart of a dense 3D sound environment full of sound emitters that change pan position depending on the player's movement – so sound cues in surround are an important informational and navigational aid.

"Overall, to me, what makes a game mix rock is the same as for film or music – energy, clarity, and good focus. Plus we should be using this fantastic ability we have to subconsciously lead the player around more – it's very important and not many people are doing it well, if at all."

Sony Computer Entertainments Audio Manager, Garry Taylor.

An Artist's Tools

Taylor believes that fast, efficient mixing tools are the order of the day (usually bespoke virtual mixing applications to control-all 'exposed' tweakable parameters like volume, pan position, reverb send, and so on): "In reality every project and toolset differs but in principle, what you're looking to do is create systems that give you all the functionality you'd expect to find in more linear environments such as Pro Tools or Nuendo. You want to think in terms of tracks, routing, grouping, snapshots, and plug-ins (one of our audio engines sports a suite of Sony Sound Forge plug-ins usable live on PS3). There's a happy medium between what I'd call passive and active techniques – for instance, setting up routing configurations, enabling dynamics processors on groups, and feeding them side chains from other groups – whereas an active technique might be large group fader moves via snapshots to create a dramatic audio moment driven by a prevailing game condition or specific game event e.g., sudden threat introduced or a building getting blown up next to you. Ideally you have a mixture of both approaches."

According to Taylor, it's vital that such tools enable a fast workflow for rapid addition and implementation of sounds to get the audio up and running quickly, thereby allowing time for creatives to take a step back and look at the bigger picture. Taylor: "You want them thinking 'okay, it's sounding good – now what can we do to heighten the emotion?', and if you give creative people great tools, they'll use them in creative ways. One inexorably leads to the other."

Mitigating The Inevitable

Such tools also mitigate the inevitable time pressures that continually assault major game productions with the average schedule of yesteryear not even allowing for a final mix period. Taylor: "The mixing stage used to be overlooked due to often short times between 'content complete' and 'master submission'. It's only been in the last three years or so that we've really started to schedule mixing properly, having run workshops for our sometimes non-audio-savvy game directors and producers to ensure their buy-in and appreciation of the benefits. It's all about education."

Another key element is the listening environment for mixing work, something Taylor feels strongly about: "Most of our big development houses now have their own 5.1 and 7.1 calibrated audio studios with Genelec monitoring. But for smaller developers without such facilities, it's absolutely essential to hire a decent studio to hear and tweak the true picture of their audio mix. It's also so useful to have fresh ears on the matter. I often mix or consult on the mix of games whose main audio production I've not been involved with, for instance MotorStorm 2 and Killzone 2. In turn, I'll take my own audio productions to one of our sister studios to get that valuable external input from trusted colleagues."

Follow The Lead

As ever, with game audio, where the industry champions and leaders go, the rest inevitably follow. The results are good for all gamers whether audio-conscious or not, because as *Audio Media* readers know only too well, great audio makes the pictures better.

You can hear Garry's presentation at the Develop Conference in Brighton on Thursday July 15, 2010. www.developconference.com

THE SONNOX TOOLSET

It already packs sparkle, impact, and energy... now it can clean up any act.

Sonnox recently released the Restore suite of three plug-ins: Oxford De-Clicker, Oxford De-Buzzer, and Oxford De-Noiser. Between them they offer program-specific restoration tools for almost any situation – including difficult dialogue sessions and low-grade location recordings. Its in-depth, yet user-friendly interface makes it ideal for fast turn-around fixes across all material.

Other Sonnox tools that are proving extremely popular for the games market are the Oxford Inflator and the Transient Modulator.

The Inflator provides an increase in apparent loudness, without obvious loss of quality or audible reduction of dynamic range. It can also add power, presence, and warmth, and even provide headroom overload margin above digital maximum with a subtlety and musical character reminiscent of tube systems.

The Transient Modulator allows dramatic manipulation of signal transients. It can exaggerate or dampen attacks, with continuous variation between all settings. If you're after more 'snap' in your gunfire or more 'crack' in your explosions, this is your answer – or it can bring back the ambience by softening up-front attacks.

Other Sonnox plug-ins include the famous Oxford EQ and Oxford Dynamics – both based on algorithms from the acclaimed Sony OXF-R3 digital mixing console.

There's also the Sonnox Reverb plug-in, which has a pool of stunning presets as well as full control over many parameters, including a comprehensive early reflections section, and integrated fiveband EQ. The Oxford Limiter provides program loudness control and limiting functions. Its 'Enhance' function provides sample value limiting, and allows unprecedented volume and punch to be applied to program.

The Oxford SuprEsser is a fully-featured pro De-Esser and a Dynamic EQ. An intuitive FFT display and three listen modes enable the user to easily see and hear exactly where the problem frequencies are.

INFORMATION

www.sonnoxplugins.com

Music, Dialogue, Effects...

Nimrod Productions is expanding its operations – more people, more service, more facilities. Richard Aitken talks about the changes.

Audio Media last spoke with Richard Aitken of Nimrod Productions 12 months ago. Since then, a lot has happened. As well as completing work on a number of games – most recently the Disney Interactive title *Split/Second* – the company has been growing. Founded by Aitken (production) and Marc Canham (composition), Nimrod has moved its expanding dialogue production business into a new company – Mana Sound, with a new London studio in Hammersmith. In addition, its orchestral services arm, NSO (Nimrod Symphony Orchestra) headed by Dr Jon Williams (conductor, arranger) has been busy, and there are plans to turn this into a separate company to recognise that. That leaves Nimrod to concentrate on composition, production, and music licensing.

Also, the company has had its first big success in crossing the great divide – a film score for *The Disappearance Of Alice Creed.*

AM: *What do you think has changed in games sound over the past few years?*

RA: "I think generally there are fewer games coming out; that's the main thing. But those that do, really focus on quality. There's much more in terms of 'this has got to sound on the level of a Hollywood film', or a non-Hollywood film if it's deliberately not meant to be a Hollywood sound... There is a focus on quality these days which there didn't used to be, and I think that's come from most developers having in-house sound people who actually know what they're doing and have good set-ups.

AM: *Are you scrutinised more?*

RA: Not scrutinised more... I think we've been around the block a few times, we've done a lot of projects, and we've been here quite a few years now. I think we're trusted with people's work. We have good relationships with the music supervisors and in-house music people of all the games companies anyway, and hopefully our work speaks for itself.

Richard Aitken, Production Director at Nimrod.

I guess that's the ultimate thing isn't it? If you do the work, and it sounds good, and people like it, then you're kind of doing your job – aside from having a good working relationship with people as well.

AM: *So business is healthy?*

RA: Absolutely. Though if we were to only be working on score alone, we'd be earning a lot less than we are. For a small company we're a pretty high turnover company now, because we've spread our wings – and we're spreading them further over the next couple of years as well. NSO's going to become standalone with its own directors, Nimrod's going to focus on being purely a recording service, so a production centre and recording service. Mark Canham, my business partner, he's very much a composer in his own right, even though I'm his sort of arranger/producer. We push him forward – rather than 'Nimrod will do your music', 'Mark Canham will write your music, and Nimrod will record your music'. We've already split voiceover off into Mana Sound, we'll will be creating a special sound effects company in the future; and our licensing thing – which is probably 40% of our business anyway – that's going to become standalone as well."

AM: *You've been a Sonnox plug-in user for quite some time now. What are your main tools from that range?*

RA: I still use the EQ, but my main tool is the Transient Modulator. It's an engineer's secret tool. You shove it on the end of your mix to give it some life once you've finished the mix and compressed the stuffing out of it. It sounds alive again!

It can turn my 5x5m live room into a 10x10m live room, because I can get that effect of pushing things back – fewer transients on the mics. If I was to have a desert island plug-ins list... Transient Modulator would be on it.

The Sonnox EQ gets used in all of our voiceover stuff... Partly because you can get down with very narrow Qs for getting rid of resonances, or you can do general air or bottom-end work without it sounding muddy or too harsh. It's a good EQ for that actually.

www.nimrodproductions.com

Big League Games

Alexandre Carlotti of Ubisoft, Montpellier, talks creativity, standardisation, and trust.

Ubisoft is one of the bigger games developers around, with revenue in 2009 reportedly reaching over one billion Euros in 2009. It has been responsible for some incredible success stories, such as the *Assassin's Creed, Tom Clancy, CSI,* and *Raving Rabbids* series, amongst many others.

Alexandre Carlotti works at the Ubisoft video game production studio in Montpellier, France, which currently employs around 250 people. Recently, the studio moved into a new building and took the opportunity to put in new sound studios as well. There are three rooms in this department. One is a multimedia mix room with a full Genelec 8000 series surround system (8030s and a 7030 sub) with Pro Tools and four development machines – PC, XBox, PS3, and Wii. There is also a recording room with separate control room. That room runs a Nuendo system with AKG and Neumann mics, and SPL pre-amps. The third room is an 'integration room' for audio programmers – somewhere they can work without headphones. The rooms have mass and space isolation within the building, and internal acoustic treatment for the rooms themselves.

Carlotti's counterpart in the Paris studio, Martin Dutasta, has a more traditional studio with Genelec monitoring, an SSL C200 console, Pro Tools, TC reverb, and so on. And the scale of operations increases even further when you get to Ubisoft HQ in Montreal, which has mixing rooms on each of the five floors.

For satellite development studios, the sophistication and quality of the facilities in Montpellier and Paris are still quite unusual. However, they are justified by an ever-increasing emphasis on sound quality and creative integration.

Carlotti: "Several games are done here. If we just ordered our sound [outsourced] it would be hard to manage. Now the most important thing is the feedback. We think that the guys who are designing the sound should have a bigger part in the sound creation. It should be more than a name in an Excel sheet, it should be done at the moment it's needed, not two months later."

"Most of the music we're doing now," adds Dutasta, "Is orchestral recording. We also hire in top voice actors from LA. The budget for the sound production in a big project is quite a big budget now, so we're trying to improve the quality and get the right people at the right place."

One of the main reasons for going with Genelec monitoring was that the Montreal studios also recently equipped with Genelec systems, and the Paris facility has been using them for a while. It often makes sense to standardise, especially if projects are moving around. "Now we have kind of standardised our speakers," says Carlotti. "It helps because we never say 'but you don't have the same monitoring'. We know we have the same monitoring, so when there is an issue we know it's come from somewhere else – maybe the PC version of a game or something like that."

> "we need to trust our monitoring and know that the audio is dirty because the file compression we're using is awful!"

Carlotti also notes that often the compression used in games has adverse effects on the audio quality, such as when there are "20 or 50 MP3 sounds playing at the same time... If you don't trust your monitoring, you want to incriminate them, so we need to trust our monitoring and know that the audio is dirty because the file compression we're using is awful!" AM

MONITORING MASTERS

Ubisoft has standardised on Genelec monitoring for many of its studios. The reason is in the box...

Genelec is well known for being one of the most popular choices in monitoring in many areas of our industry, and particularly in post production environments. The 8000 series of products has become the new face of the company with several innovative technologies at its core.

These all-aluminium Minimum Diffraction Enclosure (MDE) units sport rounded edges that curve gently into the shapes of the Advanced Directivity Control Waveguide (DCW) and the large rear-opening of the reflex tube. The long, curved reflex tube is flow optimised to increase the woofer's low frequency extension and SPL capacity.

New low distortion drivers combined with carefully designed crossover filters result in improved resolution and less listening fatigue over the entire audio spectrum. The rubber based Iso-Pod (Isolation Positioner/Decoupler) provides adjustable enclosure tilt so the user can point the acoustical axis precisely towards the listener for best sound reproduction.

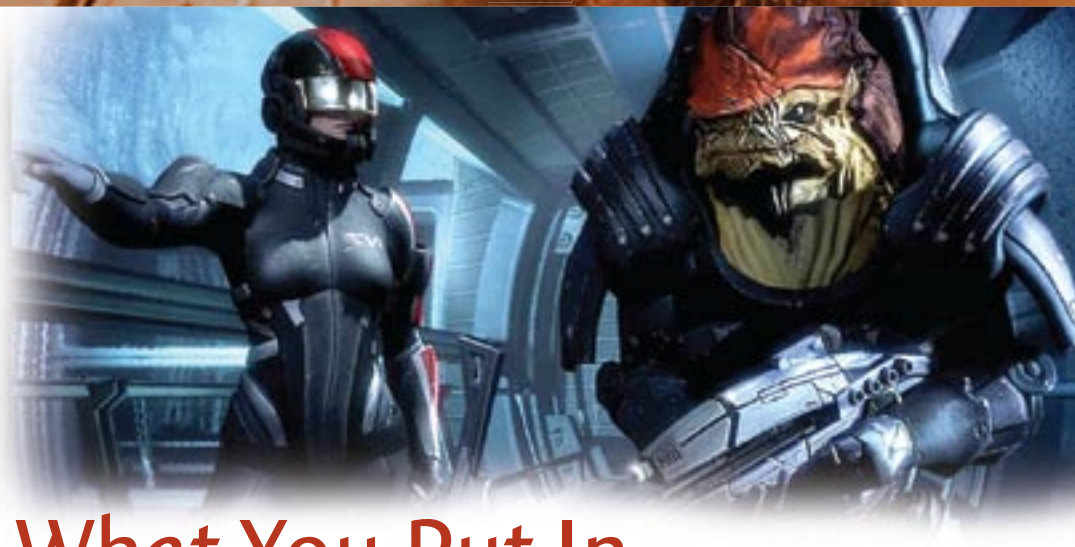
The Iso-Pod also prevents colouration caused by conduction of unwanted vibration to the mounting surface.

The 8200 DSP monitoring systems include DSP, GLM, and AutoCal technology, which allows the monitoring system to adapt to their acoustic environment.

The most recent addition to the 8000 series is the three-way 8260A. In a departure from the two-way standards, Genelec has introduced Minimum Diffraction Coaxial (MDC) technology in a tri-amped design.

Genelec also makes a large range of sub-woofers in both analogue and DSP models in the 5000 and 7000 series ranges. These include the LSE models, incorporating the Genelec Laminar Spiral Enclosure bass reflex cabinet. This is made of sheet metal rolled into a spiral shape and clamped between thick MDF side panels. It provides excellent laminar flow characteristics with minimal turbulence noise and enables an optimal packing of a very long reflex tube into a small space.

www.genelec.com



A MULTI-FRACTION OF USES

Prism Sound's ADA-8XR and Orpheus provide the highest quality and versatility for interface and conversion.

Prism Sound's ADA-8XR multi-channel modular AD/DA converter, now METAlliance certified, provides all the pristine sound quality you'd expect from the UK-based company, as well as a hugely versatile choice of interface and conversion options. The unit can be configured as a 16-channel AD converter, a 16-channel DA converter, or an eight-channel AD/DA converter. It doesn't stop there though. It can also function as a multi-channel FireWire interface, an AES/ EBU/AES3/ SPDIF digital to analogue or analogue to digital converter, a high resolution Pro Tools interface, or as an interface for a wide array of other DAWs. The 8XR is ideal for music and sound recording, mastering, broadcast, and post- production, and has been used in many of the world's most revered studios.

Providing a more affordable opportunity to harness Prism Sound's world-renowned audio quality is the company's Orpheus FireWire recording interface. Its design philosophy is a no-compromise approach to providing the best sound quality available. The company stated its mission was to, "Get Prism Sound quality conversion and mic preamps into a 1U box at a more accessible price point." The dedicated FireWire interface is compatible with both Windows and Mac OSX, and offers four integrated mic pres with switchable phantom power augmented by eight premium-quality AD and DA channels. For added versatility, output can be selectable between workstation bus or the Orpheus mixer itself.

INFORMATION

www.prismsound.com

What You Put In

Matt Howe has been at the sharp end of Music Production for some time and has formed a successful partnership with game music composer Richard Jaques. With quite a few games (and films) under his belt, he tells Audio Media where to stick it (the audio).

AM: *What are you up to at the moment?*

MH: "I'm working on this track, it's got between 140-150 tracks. I can't reveal the what the game is, but strings have been recorded in Czechoslovakia, brass has been recorded at Abbey Road, percussion has been done at some bloke's home studio, and a drum kit has been recorded at another guy's home studio. Digital string parts are being done in someone else's home studio, guitar parts are being done in LA."

AM: *You have quite a history with Prism Sound convertors, don't you?*

MH: "That goes back to my days when I was a staffer at Metropolis. Ian Cooper, Tony Cousins and Tim Young listened for hours and days and months to all sorts of interfaces and converters for what they would use for mastering. They went with the Prism Sound AD2 for capture.

"At the time Pro Tools was making more of a stance in large complex facilities. Prism built a card for their AD88 frame, chucked it in, and it worked fine. It could read and register the data stream, and we could do session management with Pro Tools, and everything sounded brilliant, markedly improved from what I expected. We had more depth, it was just less murky and grainy-textured, more pristine, more clarity, and truer to the feeds that were coming off the desk.

"I did a session at Abbey Road with Richard - myself and Richard, because he was in-house at SEGA, and he had a lording great Pro Tools system – eight interfaces and I don't know how many expansion slots. At Abbey Road I had a borrowed set of ADA8s, and we took that up to Abbey Road as a back-up system.

"Consequently, I think Abbey Road have bought up to 20 Prism Sound units now.

"And another thing – very important for me and for others as well – is the after care and support. Anything can be resolved. If there's a problem, I can get a spare board, or a spare unit, or if I needed some extra parts from suppliers or whatever, you know, the know-how is at hand.

"On the current project, I'm the only person that's getting the benefit of Prism. Everything has been analysed and listened to and measured and controlled using my Prism system.

AM: *How long have you been tied up on this game?*

MH: "This one's been going for two years... Though, we've been doing other projects on the side as well... They're not games projects though. I've been working for some people in Italy – a music director who has built a studio away from his home. He does data transfers with me over the internet. He can upload the multi-track onto my server, I grab and import it into my system, mix it, send him the mix, return him the Pro Tools session. I've been doing a lot of work from home... I'm working on gear I'm happy with."

AM: *When does this secret project come to fruition then?*

MH: "In fact, we've already reached the contract deadline... we have actually delivered, so what I'm doing is fine tuning before hard implementation. Then after there's nothing we can do. It's released later in the year and we hope it will be a big hit. It will be a very British event."

www.matthowe.net

Special Compositions

Ian Livingstone has been behind the music for some very big games, including Napoleon: Total War, Battlefield 1943, and Batman Begins.

AM: *How, in general, does a games commission differ from a film commission?*

IL: "For commissions the main differences are time frame and payment structure. For games I've often been brought in very early on in pre-production and the production milestones can be stretched over 12-18 months, so a real luxury for experimentation and research and an ideal world for booking orchestras and players well in advance. Having said that, the last couple of big games I've worked on have been more similar to the film/TV model with 4-6 weeks from start to finish.

"The games industry standard for payment structure seems to be a per-minute rate and often initially quite lucrative but it's a one off buyout, no royalties. With TV and film the composer receives performance and mechanical royalties, so both have their advantages and disadvantages.

"Creative directions in some respects are very similar. In a game you are dictating to the player how to react for a certain scenario – tension, stealth, exploration, fights at many levels of intensity, etc – so you have to cover all of these possibilities in the score by imagining all of the different emotions the player may be having without having any real visual help. Whereas when you're working on film/TV, the real human actor is dictating the emotion – it's linear – and often dealing with more emotional possibilities that you mainly don't find in games – love, adultery, etc. Again I like both mediums because often I don't get to do the big epic stuff in TV/film, and I don't get to do the small intimate stuff in games."

AM: *How much studio versioning do you do before recording an orchestral score? Have you already tried an in-the-box version before you get to the studio?*

IL: "Elaborate MIDI mock-ups are a vital part of the process for both games and film – I was hired last year to produce the MIDI mock-ups for Harry Potter and the Half Blood Prince movie prior to recording at Abbey Road, so the director and producers could hear a very good approximation of how it would sound before they recorded a single note. For a big movie like that it is vital to be able to tweak orchestration at a very late stage in the post production process and ensure there are no surprises on the day – when you're paying £30k+ a day you can't afford to be having a conversation with 80 musicians about transposing parts – that can be tweaked in pre-production instead.

"A few years ago some composer friends who met up on a forum ('Vi-Control') got together – we were very frustrated by the sterility of commercial sample libraries – perfect tuning, noise reduction, etc – and we also had our own criteria for recording on a sound stage – at the time the only options were mainly big hall or close-miked studio. So we recorded our own library in Utah – the union rules are very relaxed there and they have fantastic musicians and great facilities. It was a huge undertaking and I'm still constantly editing and tweaking.

"I have quite a large rig permanently set up in the machine room – eight custom-built machines all sharing the work load with 800 MIDI channels, all using MADI and ADAT digital connections. I tried streaming audio over a network briefly but wasn't happy with the latency on the slave machines – during playback it's compensated, but I want 1.5ms latency as I'm recording and you just can't get that with 64 audio channels over LAN."

AM: *Has the increase in downloadable content brought more opportunity (I notice Burn Zombie and others on your credit list)?*

IL: "I love working on big AAA games where you're spoilt with the amount of time you can spend on a score, but sometimes the buzz and excitement that comes with working on a very quick turnaround project can be equally rewarding.

"You have less opportunity to hire external studios and mastering engineers, so I've had to learn those tools myself too for the times when it's just not possible to hire the best possible people. I always try and hire at least one live musician per project regardless of budget though, as it just injects so much human emotion into the recording."

www.ianlivingstone.net

Ian Livingstone, Steinberg user (Photo: Nigel Jopson ©).

NATIVE POWER IS WHAT YOU NEED

Ian Livingstone is a committed Steinberg user, and is taking full advantage of the new features in Nuendo 5 keep him on top of his games.

AM: ***What are your main reasons for being a Nuendo user?***

IL: "I've been working on Steinberg software since Pro-24 in the mid 80s, and to me they've always seemed to be the great innovators on the cutting edge rather than following trends. Recently some of the big name 'Cubendo' composers like Hans Zimmer have jumped on board too with the developers with some feature requests for writing to picture. I've jumped between Cubase and Nuendo depending on which is the latest version with the most benefits to my working methods at the time. These days I'm leaning more and more towards Nuendo as the post pro features are becoming invaluable – the new surround panner in v5 is amazing, pull up/pull down sync, multiple markers, batch export, automation, etc."

According to Steinberg, Nuendo 5 empowers professionals working in audio, live, and post production for the film, television, and media industry to higher levels of productivity. Post-production editors, film mixers as well as live recording engineers around the world already rely on the flexibility and industry openness that Nuendo provides.

New features in Nuendo 5 include:

- **Toolset for ADR work and new native video engine.**
- **New Clip Package file for saving clip clusters.**
- **Smooth scrubbing engine for precise cutting.**
- **Wave meters in the mixer window.**
- **Extended project exchange, including EDL lists.**
- **New editing features.**
- **Nuendo Surround Panner V5 and more new VST3 plug-ins.**
- **Extended automation system with 'flexible passes' technology.**
- **World-class mixing and routing features with automatable mix buses.**
- **Reworked MediaBay with networking.**

www.steinberg.net

Videogame Dialogue – 'The Final Frontier'?

JOHN BROOMHALL talks about the current state of speech in games with Supermassive Games' Barney Pratt.

Senior Sound Designer, Barney Pratt, has been around the block and bought the t-shirt – in both moving pictures and games. Following five years' film sound editing on *Troy*, *Charlie & The Chocolate Factory*, *Batman Begins*, and *Harry Potter*, he joined the ever-growing stream of movie migrants to the games industry – a journey that began as dialogue specialist on *Harry Potter – The Game*, and continues as Senior Sound Designer with Supermassive Games' three forthcoming titles – *Start The Party* (Playstation Move), *Tumble* (Playstation Move), and *Big Match Striker*.

Barney Pratt, Supermassive Games' Senior Sound Designer.

So, what does he make of today's videogame vocals? Pratt: "It's a mixed picture – some teams are getting it absolutely right – Bioware is a leading light for larger speech projects with *Mass Effect 1 & 2* – and *Wii Sports* was great too – superbly economic usage, but brilliantly done. In general, I'd say we've come on in leaps and bounds over the last few years although sadly, whilst some nail it, others still fall into familiar traps."

Hard Habits To Break

At least the industry finds itself with a higher quality of speech problem than the cheese-ridden scripts, dodgy concatenation, and appalling fidelity of earlier days. And yet, some of today's speech crimes seem bewilderingly dumb, as Pratt points out: "One surprising problem I still hear is voice recorded too close to the mic (or worse, too close to the wrong mic) giving it an omni-present god-like vibe even though you're looking at a character in a 3D environment. Then you hear lines badly mixed against each other with characters seeming louder than those they're interacting with. It's often a normalisation issue where a little peak has pushed down the overall level. Another pitfall is lack of a sense of natural interaction between characters – easily lost when they're recorded separately without due care and attention. You also hear lines simply not having the correct emotion for the in-game delivery context – being out of breath is a classic. These things should be recorded in context e.g., Electronic Arts' basketball games where they record the actors running around on-court."

The Write Stuff Not Sexy

"It's dangerous to generalise but you do have to remember speech is tied to the perennial problem of audio in games not always being taken seriously enough in some quarters, with inadequate resourcing/scheduling. Speech gets the worst of that, not seen to be as sexy or rewarding as the music and sound effects with the least experienced team members often getting assigned to it... The CTO of one of the UK's leading game development studios told me – 'You're right. We've just audited all of our audio tech and nobody mentioned speech'. That kind of blind spot is not as rare as you'd hope."

Size Matters

Whilst some of those game speech failures seem straightforward enough to address, there's a significant mitigating factor to take into account – namely the mind-boggling enormity and complexity of these projects. With multiple permutations of interactive dialogue between dozens of characters, they sport line-counts of anything upwards of twenty to fifty thousand. The resulting number of audio assets recorded is staggering. Pratt: "Although game speech production methods were originally derived from film procedures, game scripts often far outweigh those of even epic pictures. On a Potter game, for example, there can be 20,000 scripted lines, over 80,000 individual wave files of 'takes', and 100GB of data. Each take must be edited, levelled, and processed to work together smoothly with others in the game world."

If you'd think a software-based industry might have created smart recording and post-production applications to help handle all this – you'd be right. However, it has generally only been large organisations sharing technology in-house across multiple studios that have done so. Pratt: "You really don't want to be carrying A3 photocopies and making session notes with a Biro when you're surrounded by clever people who write software, especially when you're recording into a digital format from the start. Games offer opportunities to redress film workflows in that sense. You need a central way of keeping all the information and data in one place. I had the opportunity of designing a speech system at Electronic Arts which automated a lot of labour-intensive asset management, enabling partial editing, auto-naming, and eradication of repetitive procedures, also assisting with line-feeding to actors being recorded separately but for group scenes. But such systems aren't readily commercially available."

No Compromise

Getting it right clearly isn't rocket science, but does require experience, vision, organisation, and good execution – and perhaps the clout to demand the basketball 'on-court' type of scenario when it's important. Pratt: "There's no substitute for attention to detail – for knowing the script inside out and the context of every line. Even on a budget, you can do great things. We're a relatively small audio team handling 25,000 lines over nine months – which is a lot – but we're just not prepared to compromise, so we find solutions and develop new technology to help. There's really no excuse left for poor speech content in games." AM

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Steinberg Nuendo 5

PAUL MAC unpacks the latest update to the full-featured Nuendo 5 audio production software for Mac and PC.

BY SKIM-READING the various 'what's new' documents it quickly becomes apparent that Nuendo 5 has had improvements in many areas. It wasn't enough just to sort out Media Bay, for instance. Steinberg has addressed almost all aspects of this application in one way or another.

There's obviously no way I could get through every nuance in these pages, but after having played about and experimented for a while now, I have come up with a bunch of headliners. For the rest, well, see the catch-up bit at the end, then add a few more for good measure.

The new look for Nuendo is by its very nature, the first thing you notice. To be honest, the idea of flitting between versions to find out which buttons had been moved where wasn't high on my list of things to check out, but I can say that the look is much less cluttered, much more modern, and as a default, less 'in your face'. You can though play inside preference world for a while in order to change the overall feel of the workspace.

One major visual tool that I went to check out first was the facility to put wave meters into the mixer screen. This is simply a vertical scrolling wave display, shown so that the waveforms become the meter, complete with a recent history thanks to the length of the wave window area. At a demo I attended a few weeks before getting my hands on the real thing, this wave meter view probably got the most resounding 'now that's cool' response from onlookers.

"This is where you can manage pretty much any asset available to you, whether it is local or not. It can manage audio, clip packages, MIDI files, MIDI loops, pattern banks, track presets, plug-in presets, video files, and projects."

Spotty Markers

Steinberg has extended the marker functionality in Nuendo by some margin. We're way past simple locate points now, with the dedicated marker window supporting a wide range of attributes, and with CSV, EDL CMX3600, MIDI file, and archive track marker import and export. Obviously the plan here is to make Nuendo a useful tool for spotting and ADR sessions and so on. The clues are in the attribute categories – ADR, Dialog Spotting, Foley, and more – and you can add your own if required. Scene detection is supported, and markers in marker tracks get different colours for each scene.

The good thing about this is that one play with the marker window and everything becomes clear. There's very little to go wrong, but plenty of scope for customisation to suit your own needs. There's a drop-down details section of the marker track window and you can set up a custom information view that is filled in when a marker is selected, thereby filtering large marker entries down to a manageable 'need-to-know' show of attributes.

For spotting, nothing is more ideal than the 'insert and name marker' function, ready for your preferred key assignment. This single macro places a marker, then opens the Marker window and puts you straight into the name text field of that marker entry. Simple, yet brilliant.

Audio Excited

There are several new audio enhancements in Nuendo 5. That might seem a bit strange to mention, except that I'd categorise many of the updates as file-, logistics-, ▸

THE REVIEWER

Paul Mac is the Editor of Audio Media magazine.

The new Nuendo 5 panner has been one of the most praised aspects of the upgraded package. You can assign a panner to any insert, but more likely you'll get one automatically when you choose a surround bus or output, easily accessible through the e-channel or from the mixer and project windows by double clicking on the small panner display. If you double click on the panner for a 5.1 channel that has, say, a stereo output assigned as its primary out, then you'll get the MixConvert plug-in appear.

The panner is displayed with both input and output meters, plus the main central area. That area has an additional overview mode that shows virtual positional information that the panner leaves the main panning area. There are plenty of controls for all of your surround panning needs, including the orbital panning controls.

My next experiment will be to hook up an ordinary USB games controller for inexpensive double-joystick fun...

and function-based rather than strictly audio and processing updates.

One distinct improvement is in the quality of scrubbed audio. It might not be an entirely expected update, as the scrubbed audio quality in recent, older versions has actually been quite good, but this one is a little special. I tried pushing through a dialogue track with a decent number of edit points and was struck by the ease with which the scrub dealt with it. Most start and end points were clear and I found myself relying far less on visual cues. That's not an easy thing to get used to when most are now primarily editing with eyes rather than ears, but it's a skill worth pursuing (even if I've haven't quite got it yet...).

Inside the lovely looking sample editor (now much easier to manage and manipulate the myriad of hitpoints, slices, and AudioWarp features) there's a new feature called VariAudio. Actually, it looks quite a lot like the last iteration of Melodyne in that monophonic audio is analysed, split into discrete regions, and from there you can drag them around and otherwise get pitch and time sorted out in a very detailed way. it's a welcome addition.

Also under the audio banner are the new plug-ins that come with Nuendo 5. I guess the most anticipated is the surround panner (see box), but there are plenty more to explore. There are two new pitch plug-ins – Pitch Driver and PitchCorrect. PitchCorrect is an interesting real-time pitch correction plug-in that presents a scrolling display of the track's audio above a picture of a keyboard. You can adjust scale and formant considerations, and 'correction' parameters (speed and tolerance).

Pitch Driver is another one of those very simple plug-ins, with a good quality result and quite a few possibilities. The plug-in generates an additional pitched signal which you can then mix with the orignal both within the plug-in and on the single track. My first move was to get an eerie, disconnected bass copy going as practise for any horror movie that might come along. Think of it as a fast way of starting something a little bit odd.

REVerence is a new VST3 convolution reverb (derived from sampled environments), which is a good deal, given that third-party convolution reverbs still command good price tags. This one comes with over 70 responses and offers some nicely useful adjustments, from pre-delay to early reflection tail tweaks, as well as an overall adjustment with click generator for auditioning clean reverbs without the muddle of on-going audio. On the whole, the provided samples seemed pretty clean and accurate to me. There's a basic EQ included, which I felt the need to tamper with on a fair few of the presets, and I was pleased with the natural tails that disappeared quietly without stopping for grunge.

Other plugs include the matrix encode and decode processors (surround to stereo and vice versa), plus a few older ones that have been given the VST3 face lift. However, there are still a fair few that haven't been given the 'treatment'.

One thing that might excite pedantic podcast producers and dialogue specialists is the enhanced crossfade facilities. It's actually hard to imagine what else you'd need to adjust about a crossfade that wasn't already there; after all, 'equal power, nicely curvy' does seem to do the job most of the time. Still, the power to throw in an asymmetrical fade now and again on a special occasion is a good thing.

Route And Branch

Steinberg has added an extra dimension to outputs in Nuendo 5 with Direct Routing. This is specifically intended for routing groups of channels to create post-panner combined

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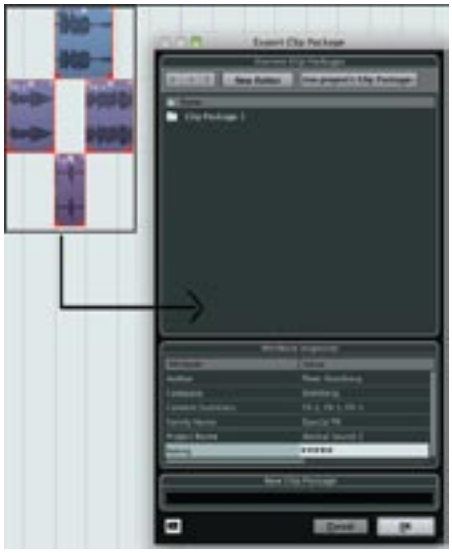

outputs. The flexibility here is in the ability to choose, switch, and define multiple outputs for multiple channels at the same time, rather than going through channel by channel and grappling with the normal routing.

There are eight direct routing slots for every mixer channel and there is automatic upmixing and downmixing for mismatched channels and outputs (a 5.1 channel being sent to a stereo output, for example.

This is more quick-trick routing in that you can quickly throw groups of channels into different outputs for context checks or whatever else might be necessary. Even Nuendo Busses get direct routing facilities, so if you already have a group set up, you can easily route that elsewhere without messing about too much.

The direct routing facility is a good idea, though of course it's not possible to customise a mix per direct output as it's exactly that – direct.

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Mighty Media Bay

Nuendo has experienced a big overhaul in Media Bay. This is where you can manage pretty much any asset available to you, whether it is local or not. It can manage audio, clip packages (more in a bit), MIDI files, MIDI loops, pattern banks, track presets, plug-in presets, video files, and projects.

Search, filtering, and attribute (metadata) searching and administration is now very sophisticated - all designed to make navigating and finding your way through ever-increasing asset stores a whole lot quicker and easier.

The new-look Media Bay has several sections, and as with other major views in Nuendo, the makeup of the Media Bay display can be customised by clicking on the window layout icon. Aside from the main result window, Media bay has Define Locations, Locations, Filters, Previewer, and Attribute Inspector sections.

Locations are essentially 'favourites'. All you do is go through and point Media Bay at your main resource folders so you can always have direct access via the Locations drop-down menu to common folders. The text search function searches file names plus the extensive array of attributes available to every file, and there's the option of using boolean expressions to refine it. There's even a ratings system where you can filter out any files that have not been rated to your specified level. In addition, the filter section allows you to set up some very detailed conditions for refining your search according to file attributes.

Once you've selected an asset, the preview window has some useful actions of its own, including the ability to pick a section and just import that into your project.

The attribute section manages all file metadata, with full edit capability and, usefully, the facility to edit attributes of multiple files simultaneously - such as when you've just got back off of a location recording session and want to apply common metadata to material from that session.

You now have the option to create volume databases (the file that keeps track of file paths and attributes) locally, so external drives can be moved around complete with their own databases. Also, Media Bay 'Aspects' – saved configurations and specific search and filter set-ups – can be saved and recalled whenever you like.

Package Deal

As mentioned above, Media Bay can now deal with the new file type 'Clip Package'. This incredibly useful item has been introduced by Steinberg with Nuendo 5 for all those Sound Designers who wish they could manage and recall their creations without the bother of creating a new project for every one, or remembering which project a particular sound was created for.

Now you can save a bundle of clips together in a single file and reuse those constructions across multiple projects. Every clip file stores copies of the relevant audio files, plus all volume and pan automation, fades, crossfades, and envelopes. The only thing it doesn't do is save effects and EQ from the included tracks.

It's easy to see where this is going. You'll be able to retrieve those moments of brilliance and reuse them in other projects while keeping the option of fine adjustments and variations into the future. Great idea, Steinberg.

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AUDIO KEYNOTE

The Highly Anticipated Sound Revolution
Adam Levenson, Director, Central Audio and Talent, Activision Publishing
One day soon, dialogue and music in games will actually respond to the characters interactions in real-time with a high level of adaptability. In this Audio Track Keynote, Adam will outline how he believes this brave new world of games will sound, and how we might design the character performances and scoring of the future.

The Orchestration Of Anxiety - What Game Audio Can Learn From Psycho
Stephen Deutsch, Composer
Stephen has had his concert music performed by many eminent artists and has composed over thirty scores for film, theatre, radio & television.

Source 2.0: What To Do When You Run Out Fresh Material
Ben Minto, Audio Director, Electronic Arts
This talk is about getting more source material to work with including a discussion of location recording, foley sessions, private sellers and cataloguing past work.

It's All In The Mix - The Importance Of Real-Time Mixing In Video Games
Garry Taylor, Audio Manager, WWS Creative Services Group
Garry will examine the current cutting edge and near future of interactive audio mixing and talk about his personal quest to translate traditional linear mixing approaches and methodology into the world of interactive audio.

Audio Analysis: The Missing Link
Nicolas Fournel, Principle Audio Programer, Sony Computer Entertainment Europe
Nicolas will show that audio analysis can be used to define new gameplays, build better audio engines (using dynamic mixing and audio shaders, for example) and create smarter sound design tools.

The Use of Audio as Narrative
Steve Johnson, Sound Designer, SCEA Santa Monica
Based on his experience working on Flower, and citing lessons learned from other titles, Steve will examine what ingredients and thinking are required to go beyond the norm and really use audio as narrative.

From Marching Bands to Nightclubs: The Music of Command and Conquer
Nick Laviers, Audio Director, Pacific B12
James Hannigan, Composer
In this session featuring James Hannigan, one of the composers he's worked with widely, Nick will explain his focus on the Command and Conquer music and his efforts to figure out how it could really 'sell the game'.

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Round Up

As I said at the beginning, there's no way I could get through the Nuendo 5 update list in one review space. Just the details and clever bits of the new Media Bay alone could take up more pages than than there are available.

Things that probably deserve a mention, but didn't get a detailed look in include the new Video engine, which is based around Quicktime and therefore inherits the SD and HD playback capabilities that gives. There are improvements to the Monitor Mixer in Nuendo, including single click selection of stems, groups, and busses. The automation system which, by the way, was already one of the best around, has been given extra meat. There is new Batch Export functionality with, for instance, cycle marker definitions. Other new additions include complete project back-up, all the advantages of improved multi-processor support and, on Windows, full 64-bit support. And the user manual deserves a mention as it's one of the best I've seen.

In September, we will be running a review of the Steinberg SyncStation, now fully integrated into Nuendo and ready to take its part at the centre of a facility's infrastructure. Hopefully we'll also come back to a few of the more relevant aspects of Nuendo 5 as well. The Automation, at least, deserves a full going-over.

One interesting story will be the continuing development of EuCon (control protocol) now that Avid owns Euphonix. There are already assurances in place that it will continue to be developed, especially as Avid is planning to integrate it into other products, and there are now quite a few installations that combine serious surfaces such as the Euphonix Fusion console with Nuendo as the main DAW in client-friendly post rooms, which means that you don't have to be the guinea pig – the strategy is already proven.

I still think that Nuendo could still do with a single winning surface that appeals to the serious post facility, without having to be everything else as well – one dedicated to Nuendo that combines the right price, the right look, and the right feel. If that were in place, there would be no reason why this DAW shouldn't take over the world.

Conclusion

You'll notice that Nuendo is faster, more powerful, and more professional than ever before. I believe that the sophistication of the new Media Bay, together with the new Clip Packages file type, could, on their own, be enough to convince Designers and Editors of Nuendo's value. However, if you add in everything else, the system is now definitely a full-service, professional, facility-friendly, recording, editing and all-round post production DAW. AM

INFORMATION

£ Nuendo 5: GB £1,531/€1,799; Nuendo Expansion Pack (adds Cubase music creation features): GB £254/€299; Nuendo 5 upgrade from Nuendo 4: GB £212 /€249; Nuendo 5 + NEK upgrade from Nuendo 4 + NEK: GB £340; Nuendo 5 upgrade from Nuendo 3 or 2: £424/€499 (all prices inc VAT).

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product preview

Studer Vista 9

PAUL MAC visits Soundcraft Studer HQ for a demo on the shiny new Vista 9 – the sum of the best that the Vista series has to offer.

THE STUDER VISTA SERIES of consoles has been a runaway success in all sorts of interesting places – from large concert halls to TV production and post production environments, and onto live touring applications. The combination of utterly flexible routing, a myriad of interfacing and routing options, and a surface that stands out from the crowd with simplicity, adaptability, and Vistonics.

The latest Vista console is quite special. It marks a jump forward, rather than a re-jig. Indeed, Studer has confirmed that the Vista 9 is the new top-end flagship console. Though the 8 will be available to customers for as long as there is still demand, the 9 represents an accumulation of features, lessons learned, and new hardware that makes it the new top dog in the Vista line.

On Location

I visited the Soundcraft Studer HQ in Potters Bar, UK, where a large proportion of the Studer operation has been relocated (though R&D and Customer Support remain in Switzerland at the Console Technology centre), and got the Vista 9 demo from Peter Weber, Product Manager for the Vista series. First, the main stories:

> "This will build the base for the future. Such a console is a big investment, and when the customer buys one of these . . . he should really be able to do any kind of production, years after he bought the console."

PW: *"The headliners are really the TFT screen, the fader glow, the standard redundancy features we've built in, the integrated monitoring, and the new ergonomic layout – the fact that you can now operate everything from everywhere. That would be about it. From outside, it looks simple, but on the inside we have started to use new, just recently available technology. Inside, it's a huge step in terms of both hardware and software technology platforms.*

"This will build the base for the future. Such a console is a big investment, and when the customer buys one of these and puts it in his truck or studio, he should really be able to do any kind of production, years after he bought the console. It's adaptable, it's expandable, it can be controlled from other systems – and we constantly bring new features and new software, which is free of charge."

So, where do we start? The Vista 9 has the same modular DSP engine and IO concept as the other Vista series consoles do. This means you can populate your DSP rack with as much or as little power as you need, and configure the console's I/O, routing, processing, and outputs exactly as you need them, within the confines of the DSP available. The system is compatible with the ▸

THE REVIEWER

PAUL MAC is Editor of *Audio Media* magazine.

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The D21 I/O options are big, and get bigger on a regular basis. The current count is 17, including mic ins, line I/O, AES I/O, MADI, ADAT, TDIF, SDI, Dolby E, CobraNet, Aviom, Ethersound, and GPIO.

But let's get onto the innovations in the Vista 9...

PW: *"The most obvious change is that we have TFT media screens, which allow us to display all sorts of data in some quite new and innovative ways... For example, the metering. For all possible channel types, we have the metering to go with it – from mono to stereo to 5.1 to 7.1, always in the same slot or space.*

"The priority is to have as large a bar graph meter as possible. This is a precision instrument, so you need to see the art.

"In order to bring in more information we have defined a lower area to be configurable – three-fold on a surround input or master. It can bring you the surround image, and we also have what we call a history diagram of incoming or outgoing signals. This shows you the history of your signal and defines or finds events like overloads or signal loss.

"When you are focusing on some important channels, you might miss what's going on somewhere else. You might hear something strange. With the history feature you can have a look and you can see what has happened.

"The third current option in this lower portion of the TFTs is a buss assignment screen.

"Also, the control bay metering is a bit special, because it's mainly made to show output channels.

"We can have different meter views for this screen. I can switch to a predefined meter view to see all auxiliary outputs. Or I can see all groups, or all programme masters, direct outs, buss outputs, N-1s, matrix channels, and so on... And then I have user pages where I can assign whatever I want, via the strip set-up again. There are four user page templates with 10, 20, 30, and 40 slots. So if I go to page four, I've got 40 meters and they can be anything."

On The Slope

If you're looking for a next most obvious difference feature, then it's probably the rake of the Vistonics and control section of the console. It's steeper than in previous models, making a very sensible assumption about the length of operators' arms. Whatever the reason, consoles have gone through a period of low rake angles and arm stretches that have forced fader caps to regularly excavate navel fluff. No more. Peter makes the point that this kind of ergonomic change will enhance both actual and perceived control, which has got to be a good thing.

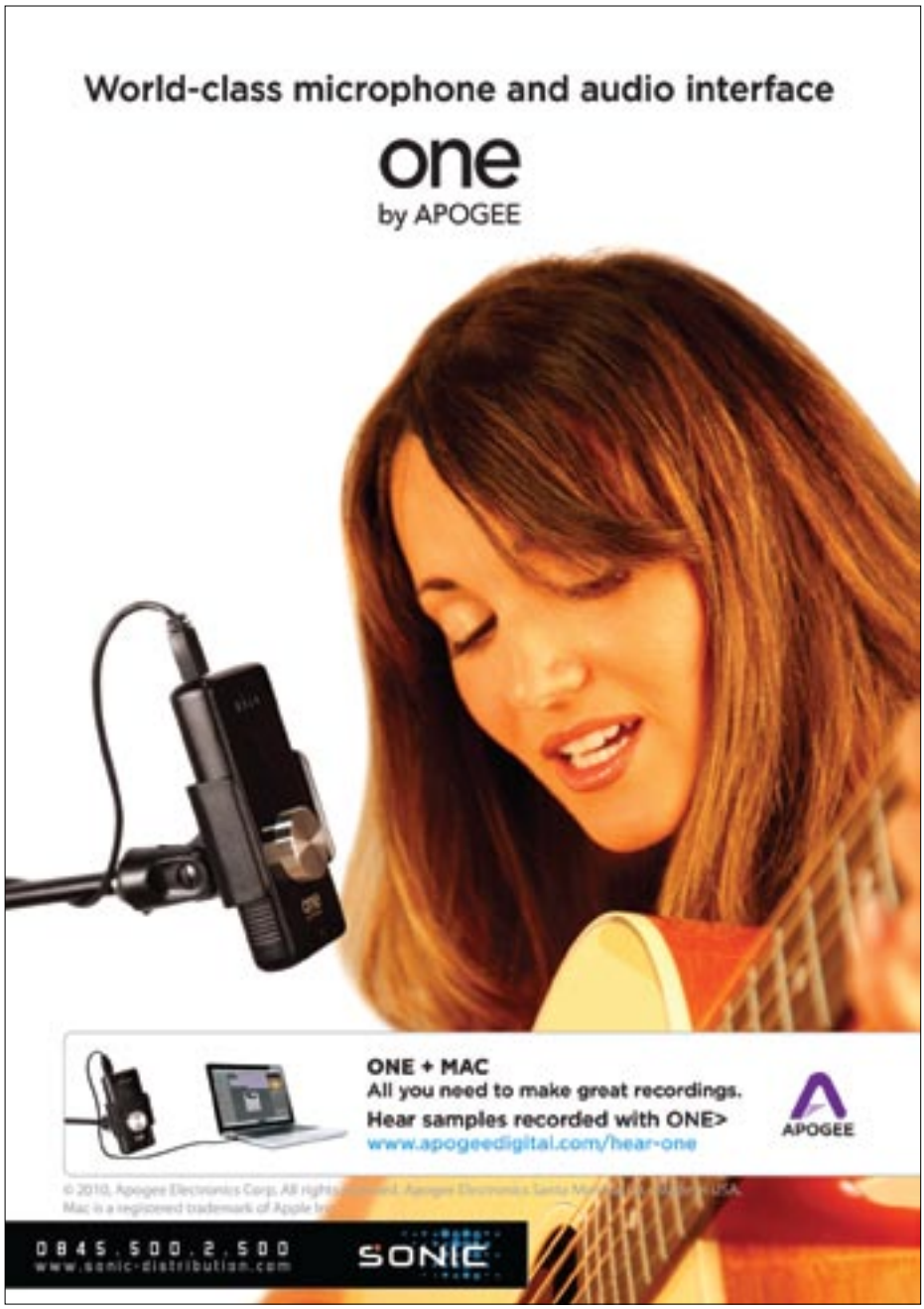
Other obvious enhancements include the introduction of FaderGlow to the Studer line. Previously used on Soundcraft's live console, this system gives the user eight different colour codes for a thin strip of light along the length of the fader path and on the Link/Select button. Per default all FaderGlow stripes are dark, but you can also define your own colours for specific channels or groups of channels.

Now, onto the surface itself, and another step forward with monitoring:

PW: *"With the Vista 9, we have integrated all control room monitoring facilities into the desk, so this means your control room speakers are directly connected to the desk. You don't need an additional IO rack just for the monitoring, that's in the desk as standard.*

"I have my sources, which can be labelled – control room, two studios; and I have volume control, two possible groups of surround speakers in the control room, two x 7.1 outputs, and one nearfield in stereo. And then I have two optional studio outputs in stereo, and have completely integrated talkback facilities where I can talk to all internal channels, the studios, and to external targets.

"It's fairly simple to set up and you can assign those buttons to be anything – any source that is available within the system.



"Also in the monitoring section, when you're listening to surround and switch to stereo, it does an automatic downmix, though there are parameters that define how the downmix should be done. Depending on the material you might want to have the downmix set differently. Then you can copy the same settings onto your master outputs and have a stereo and mono generated automatically from your surround mix as well.

"You can decide how much of the rear channels should be in the downmix, you can trim how much of the centre should be in it, and then there are three different types of algorithms. There's the ITU, and then the LtRt – doing it in a sort of Dolby way – and then there's a third one that uses a Lexicon proprietary algorithm with even more parameters to change. But that's also available on the Vista 5 and Vista 8, so it has been available before."

To Me, To You

Following the doctrine of flexibility and user choice, Studer has taken on board some comments and made the two types of fader bays more adaptable.

PW: *"We now have channel processing buttons and gain control in every channel strip on the control bay. These are controls used for input channels, but people wanted to use the control bay more flexibly and also put input channel there.*

"Now with a select button you can get to all parameters of every input channel through the control strips on the control bay.

"It makes it more flexible, because the control bay originally was designed to be used for output channels, mix masters, and so on. Now you can access everything from the input parameters in a control bay strip, not only on the fader bays.

"And it works the other way around. I can place master channels on input strips and I also have the contribution button, which shows all contributing inputs. For multi-operator sessions, if an operator is assigned to two normal fader panels he can also operate output channels, and vice versa."

The Vista 9 has even more advances up its sleeve. Studer is using a new design of quiet motorised fader. The actual motion is quiet, yes, but that mini rattle when faders start and stop has been eliminated. At least in part, this seems down to marginally 'soft-knee' acceleration and braking, as opposed to the brickwall that others hit.

As mentioned above, redundancy is also now a standard fitting, not an option. This is the first time that the Vista series has had redundant power supplies and control computers as standard. Of course, there's also redundant Ethernet links to the DSP rack, which with the MADI link for the monitoring system makes three Cat-5s necessary for hook-up.

Conclusion

It's interesting that Studer introduces the Vista 9 as a 'Live Performance Console'. Yes, it's going to find a natural home in broadcast facilities, trucks, permanent big-stage installations, and so on, but don't rule out any other uses – recording and post, for example. The automation is certainly up to the task, and the flexible approach to routing and configuration means that the Vista 9 can be pretty much anything you want it to be. The only application Studer deems as unsuitable on website tick-boxes is touring – presumably because it's not designed to be kicked around by roadies.

Studer has learned from its users, evolved its technology, and made good use of the Soundcraft development team. In the beginning, Vistonics was the primary key to loving Vista – maybe because the novelty overshadowed the detail. Now it's that, and everything else as well.

INFORMATION

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Ⓐ Studer (Harman)
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Showtime in Istanbul

Istanbul is the focus of much artistic attention this year. JO FLETCHER-CROSS visits a new theatre and conference hall installation to see how the largest city in Turkey is leading the rest of the country in technical innovation.

GLASGOW. AMSTERDAM. VILNIUS. STAVANGER. What do all these cities have in common? At one time or another, they have all been the European Capital of Culture. 2010 must be a particularly cultured year in Europe, as there are three Capitals of Culture – Essen, Pécs, and Istanbul.

Istanbul has been putting on quite a show for its turn in the spotlight, including highlighting its rich and varied theatre scene. In addition to the many small independent venues showing Turkish and foreign language theatre, the city currently has 11 state-funded theatres with plans to build more over the next year.

Turkey as a whole has state-funded theatres in every city, funded by the municipality, but as Ersin Asar, Istanbul City Theatres Audio Manager explained, "The biggest and most important ones are in Istanbul. So these city theatres are also an example to the other city theatres." They are a major employer as well, with over 1,000 people working for City Theatres, 400 of whom are performers, the rest working behind the scenes as technicians, writers, directors, and designers. Istanbul's stint as the Capital of Culture has meant busy times for all of them. Just how busy became obvious as Asar talked me through his schedule for the few weeks after my visit. "Within the next 10 days, six different international plays are showing. And the Istanbul Theatre Festival is taking place here also. We have a lot of visitors from outside the country."

Asar is based at the brand new Harbiye Muhsin Ertu rul Sahnesi theatre, which is located in the new Harbiye Congress and Cultural Centre. Turkish company Atempo was responsible for the fit-up of both the congress centre and the adjoining theatre. The centre was built for the 2009 meeting of the IMF, which was closely followed by a NATO summit. The project went very well, though it was nerve-wracking for those at Atempo. "We were ready around a week before the IMF started so it was a very tough time, lots of sleepless nights for lots of us, but we had very good results, everyone was very happy," said Volkan Konuralp, Istanbul Regional Manager for Atempo. "The IMF technical peo- ▸

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ple said that this was the most successful event they'd held outside of the United States. It makes everything worthwhile. They showed this complex and our company's work here as an example to the ministers of Egypt, who are holding the IMF congress in 2011. It's almost like the equipment used here is like a rider for the Egyptian congress centre. It got a really good reference from the World Bank people."

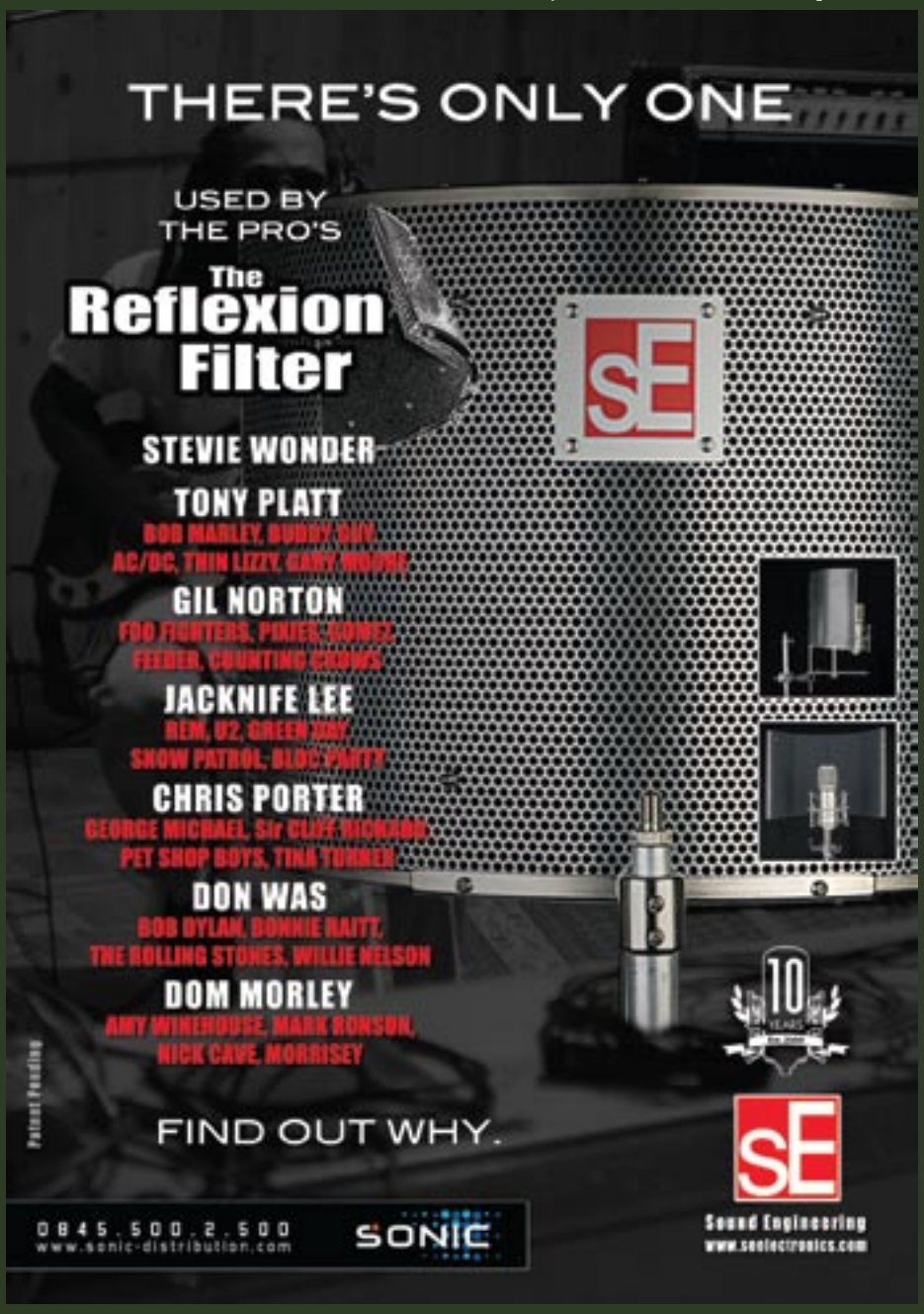
The centre and the theatre were built from scratch, giving the city an opportunity to invest in new equipment.

"Everything was brand new. They also wanted technology that would last a decade," explained Konuralp. "They wanted top quality and something that would be an example to the rest of Turkey, and that enabled us to give them the most reliable, cost efficient, and also time efficient solution – long term solutions."

Each part of the project was closely scrutinised. "Every product they looked at closely – what can this product do for us in the near future and in the distant future. That was the mentality behind it." Istanbul municipal bosses saw this as an opportunity to make a long-term investment in the technology available to delegates and artists in the city. "Everything has got to be upgradeable and keep up with demand," agreed Konuralp. The centre has met with approval from those working in theatre and events in Istanbul, Konuralp told me proudly. "It's already been receiving very good feedback from the industry, from the events they hold here, everyone is very satisfied with the results. They are just handing over the administration of the complete centre, and the company taking over has told us it's one of the systems that has the least problems."

In terms of upgradability, Atempo began by thinking about how the centre would be cabled. "There's a whole network of audio cabling and digital communication within this hall and all the other halls around the building, so there's the possibility of transferring the sound to the other halls, or OB trucks to get a satellite link from there." Everything has been thought through carefully to make sure that upgrades can take place easily. "We've positioned the mains power, dimmer racks, and amp racks in such a way so that there's room for additions in the future. That also goes for the cabling. There's redundant cabling for all the systems, plus extra cable trays for future additions, so it can be implemented without needing to do further construction work."

Atempo has installed Midas consoles in both the conference centre and the theatre. "We have two Midas consoles in the main hall," Konuralp clarified. "The XL8 as FOH, and the other, in the control room at the top of the auditorium, is a PRO6 which we can use as a monitor console. You can take either of the inputs of the mixing console and route it to the other one, and to the broadcast room where they link it to the OB vans and satellite antennas outside the building. So it's a routable network. Once the signal is in the Midas network you can route it to any mixing console or any output which includes the stage, to any speakers in the hall, the foyer area, and the broadcast room." Plans are in place to link the theatre to the system in the near future, with the network already in place to do so. The consoles are linked with Midas protocol, and in the other halls Cobranet is also used. "This is also used for simultaneous translation," explained Konuralp. This was particularly important for the IMF and NATO meetings, where delegates spoke a wide variety of languages. "Interpretation has to be sent to other halls and to the broadcast village. "The Midas consoles were chosen because of their versatility, with



the main hall in the centre designed to be the biggest and most popular in Turkey. "We wanted a console that would be multi-purpose, for concerts and conferences, and also for broadcasting applications as well. This was the way the XL8 was used during the IMF conference, with the XL8 providing the mix that went to the satellite. Of course the first event was going to be the IMF, so they wanted a console they could use for the broadcast, and after that could be used for concert applications, which isn't possible for a conventional broadcast mixer, no other console could do this easily. The XL8 could do it perfectly which showed the flexibility of the system and the technology."

Midas may have expanded the reach of its digital consoles in Turkey with this installation. National broadcaster TRT was responsible for broadcasting the IMF conference and they also came on board as consultants for the project. "XL8 was good for them as they've been using Midas analogue consoles for over 10 years and they've been examining the XL8 for a long time. They knew the console and thought this would be a great opportunity to discover the XL8's capacities and capabilities."

Over at the theatre, they were also used to analogue Midas consoles. The theatre is an entirely rebuilt version of an older theatre, where there was an H1000 in place, and they wanted to install another Midas. Originally, the theatre had specified a Verona console, but seeing how well the digital consoles worked in the congress centre, the order was changed to another PRO6. "They are still analogue-minded people, having worked with the Heritage for so long," said Asar of his technicians. "We invested in the PRO6, and when they first looked at it they thought it looked a bit scary and something to learn all over again. They soon realised that it's actually a simpler and easier system for them than analogue. They mainly use the presets, one of the most important things that makes their life easier for them."

This theatre is at the forefront of new technology in Istanbul, but soon others will follow. Plays travel around the 11 City Theatres, with a total of 20 engineers between the theatres. "All 20 must be taught the capabilities of the PRO6. Muhsin Ertu rul Sahnesi is the first to have a digital console. The other theatres will have to be renewed to be able to talk in the same protocol and user surface," said Asar. "Once they all have PRO6 they can transfer all show settings and show files onto each PRO6." He is enthusiastic about the possibilities this will open up. "It is our dream that in the future all the technical people will just walk into their respective theatres with all info on their keys, plug it in, and all their settings will be right there in front of them."

Further innovations include using Electro-Voice line arrays and side fills and front fills for the stage, something not previously done in Turkey. "This gives a depth for plays, and for background effects where they are performing acoustically," Asar explained. "It is a very new application for Turkish theatre."

A Klark Teknik DN9696 hard disk audio recorder has just been purchased for soundchecks, something Asar is very pleased about. "I'm sick of musicians who are very stubborn! It's very hard to get a soundcheck from 40 different musicians and microphones one by one. With the DN9696 it will be very easy to make them play two songs, then get on with setting the desk without the stress of having the musicians there." Not only will this make soundchecks easier for everyone, it gives the theatre the ability to make a full recording of musicals produced at the venue. Telex communication systems link all parts of the theatre, and also the hall next door. The intercom system in the main hall can also extend to the theatre when necessary. The engineers are developing a way for the lighting console and the PRO6 to be able to work together.

The new venue is opening up lots of possibilities for Turkish theatre. "As the directors start seeing new things, then they have a vision that opens up. In City Theatres as sound and lighting people we push a lot and give a lot of new ideas and approaches to the directors to broaden their ideas. This theatre is influencing the quality of both directors in theatres, and theatre quality in general." All those involved want to get the best possible equipment for the job. "The vision for this theatre is very high, and we are looking to improve it every day."

When December 31 rolls around, the baton of European Capital of Culture will pass to Turku and Tallinn. With ongoing investment in theatre looking assured, Istanbul will continue to reap the benefits of its time as a cultural beacon for a considerable time to come..

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TC Electronic System 6000 MkII (Part 2)

John Rogerson, Danny Finn & Sam Castleton continue their first-look review on the TC 6000 MkII. For part 1, see AM June 2010 (you can get to the digital edition though the AM website).

FOLLOWING ON FROM LAST MONTH'S REVIEW of the TC 6000 MkII, we've let Sam Castleton, one of the mixers at HALO, loose on it for the first time to get a sense of what it's like from a complete 'first impression' perspective. We've also had more time to look into what it offers owners of the 6000 MkI who want to upgrade to the MkII. But before all that, we'll go back to Danny Finn who has been putting the 6000 MkII through its paces for the last few weeks.

Danny Boy...

Last month I gave you my first reactions as I started to use the MkII. This installment should be a more in depth look. I say: 'should be' – I think I'd need a month of non-stop fiddling to get to the bottom of all the ins and outs (pun not intended. The inputs and outputs are dead easy). I want to give it as fair a report as I can, and each time I go back to it I discover something new.

First off, an apology, last month I stated that our delete key didn't work. The day after… I discovered (don't laugh) that it isn't a delete key in a backspace kind of a way, but in a delete key kind of a way. Sorry about that.

The two things I really wanted to delve into deeper were the noise reduction system (Backdrop), and the LM5D loudness meter (which incidentally is part of the upgrade offer for MkI owners, but more of that later).

Backdrop, the noise reduction system has three separate algorithms/ models: basic, multi-band, and multi-type. Basic is, well, basic. It attenuates the whole signal across the frequency band. Being a boy, I love the parameter 'aggression'. How could you not? It's applied as a percetnage on the amount of processing applied. It's OK if used sparingly.

Multi-band, as the name suggests, provides three separate noise reduction engines. The crossover frequencies are of course adjustable. Much better than the basic, and it worked very well for the dialogues I was pre mixing. I seem to recall that the old outboard TC dBMAX had a five-band noise reducer. There were certainly times when I thought that three bands were too wide for the effect I was looking for. It meant a lot of stopping and re-calculating noise prints for different scenes where as, back in t' ol' days with a careful set up at the start of the day it would almost run for the entire show with only an occasional change of frequencies.

The third model is called multi-type, and very clever it is too. I won't bore you with the factual details (available on TC's website), but basically the noise is split between buzz, room, and hiss. All three have separate parameter controls. This is the one where I still have to put it fully through its paces, but early indications are that this is very good and rewards a bit of a fiddle.

Loudness

All of us in broadcast TV are familiar with loudness meters. Specifically, the Dolby LM100. Having never used the LM5D I was keen to see what the fuss was about. The graphics certainly looked the mutt's nuts, reminiscent of a radar screen from a sci-fi movie (a fact not lost on TC as it calls it 'the radar page'). Visually it looks great, and after a while it becomes second nature to use. It is much cleverer as you get a continual readout and can see exactly what you are doing and how it affects the loudness, rather than waiting for the short term to change. When I used the Dolby box I had it situated right in front of me for ease of use. The placement of the MkII was a little more tricky to keep it in my line of sight and still reach all my faders. I was, however, excited to see that you could change the time it takes one revolution of the radar screen from one minute to 24 hours (does it still count as short term if it's 24hours?)

Ignoring high background noise and (god forbid) white water, the LM100 is normally great at isolating just the dialogue for the loudness reading. TC says that the LM5D includes a technology, recommended by the EBU and known as a "relative gate", which excludes silence and noise from the measurement. When the R128 recommendation is finished in September 2010, EBU Mode will be added, thereby making the relative gate discriminate between foreground and background sound in a standardized way. A measure of foregorund loudness is more universal than dialogue level, which isn't very useful with commercials, promos, music, and so on.

LM5D also includes a readout of a program's Loudness Range, which should also be part of EBU R128.

System 6000 MKII also contains new algorithms ▸

THE REVIEWER

JOHN ROGERSON owns Halo Post Productions, based in Central London. He has worked as a Mixer for the past 23 years. DANNY FINN is Head of Audio at Halo, and has recently won the RTS Award for Best Drama Mixer 2009.

to display and limit true-peak level, another parameter recently specified by ITU and EBU to prevent listener fatigue and distortion in digital audio. MKII's new summing mixer, Matrix 88, includes true-peak limiting as an integrated part of its bit transparent summing busses, thereby preserving resolution without risking overs.

Maybe it's more down to me being stuck in my ways, but having said that I am now mixing with an outboard effects unit! I never thought that would happen again.

Sam Castleton: The First Time User

Having stolen the box from Danny I find it's not really one box at all... the 6000 MkII is a beast with two heads, the 'Reverb' 6000 and the 'Mastering' 6000, and I guess I'm in the reverb section because the first thing I notice as I start playing with the ICON's touchscreen is the sheer number of reverb presets. 600 to be precise, and as TC describes the 6000 as a 'constantly evolving platform', there may be mre to come… so lots of reverb then.

The presets are grouped separately for music, film, surround, and others such as 'delays and effects'. A particularly nice touch is the 'Hall of Fame' which is full of goodies from users such as Skywalker. All the 5000 presets are here as well.

Despite not being a fat bloke with fat sausage-y fingers, I was surprised how fiddly it was to scroll through the library – you'd have to be the Ronaldo of the touchscreen to do it without any mishaps. Thankfully you can avoid too much nonsense by adding favourites to a bank with all your customised settings intact. There's also a category wizard and a word search, but in truth, I didn't use them much; maybe in time they'd become more use as I get to know the names of my favourites.

The reverbs on the 6000 are simply delicious and the surround reverbs, in particular, are inspiring. Having all parameters assignable onto touch sensitive faders gives you real precision and control, quickly. All the output sound I got was rich and realistic. You can adjust these reverbs to your heart's content, and the layout in the reverb section allows you to do so fluently. When I select 'BMW Limo', there is a separate section for early reflection. Here, I can pan, add colour, increase the low cut, or even change the early reflection type entirely to… say… 'Phone Booth'. I can then go to the 'levels' section and perfect the dry, wet, in, out, and early reflection levels respectively.

Having the separate parameters on touch sensitive faders gives you real precision and control, perfect for ADR or similar tasks. This level of control, combined loads of high quality presets really gives you a sense of boundless possibilities and, for me, this is where the S6000 comes into its own. However, I didn't feel the 'delays and effects' managed the same heights. Although the delays were unsurprising… err... delays, I thought effects were mundane. These initial offerings all use the pitch, pan, delay, or reverb engines. For me there simply wasn't enough variation for something of this price. I do a fair bit of sound design and need to get at the weird and wacky quite quickly. I was hoping the 6000 MkII would shine here.

Onwards, and with one nifty Ronaldo-esque touch of the 'factory' button we enter the world of the M6000. All the bells and whistles are here, surround metering, multi-band compression, EQ, de-essers, and so on. The usability and flexibility is impressive… endless tweakability. The compressor is solid, reasonably transparent, and has a separate LFE compression option. The EQ has a nice fine Q, but give me knobs any day – I found the navigation got in the way as I had to use seperate gain and frequency menus. There may be a way around this, but I couldn't find it quickly and if it ain't quick, it's a pain in the you-know-what.

I've never used a 6000 before, so lack any level of familiarity with it. No doubt some of the things I found irritating would improve with more 'playtime' and possibly software updates. It is, on the whole, quite sensibly laid out.

TC has succeeded in creating a quality marriage of Reverb and Mastering units, the reverb side is beautiful, the mastering side is everything you need to do the job. But it my opinion it just does too much. No doubt about it the R6000 & M6000 sides are fantastic, but most serious users will already have great metering systems and compressors, and as a catch-all EQ, Reverb, Compressor, etc, etc, there's a lot of navigation to deal with. So, personally if I was to have one of these I'd choose either an R6000 or an M6000 (which, by the way, you can) rather than both 'modules' in the same box. My job is always a balance between achieving the highest quality results in a specified number of hours or days, and I just think it's not something I'd have the time to use fully. The result would be that it sits at the side with 'a couple of presets that do the trick but never get changed'. To justify purchase I think you'd need to have the time to use it fully. I don't… but if you do you may well grow to love it.

Upgrading From The MkI

Should Mk1 users be looking to upgrade? Well, at a cost of about £1,500 let's see what you get.

For £1,500 you'll get a snazzy new brushed aluminium mainframe casing with no floppy drive which used to be for upgrading software on the MkI. You can now do that online. You also get the mainboard and component replacements, which effectively make your MkI a MkII. TC has bundled in a new licence for the LM5D meter, but if you don't mix commercials you're unlikely to want it other than to look at and pretend you live in a spaceship. You can also choose between VP8, UnWrap HD (stereo to 5.1), Stereo Mastering, or Stereo Reverb license. Finally, you also get an extra one year's warranty, which is nice. Upgrades are all done via TC dealers and they'll refurb and clean up your box (fnah, fnah) while they have it.

TC has informed 6000 MkI users that they won't be able to upgrade their software beyond the current v5 release without an upgrade to the new 6000 MkII hardware. Clearly there are practical and technical reasons why the older components/mainboard prevent software upgrade beyond v5, but the only worry for me is that if you don't want an aluminium case or a LM5D meter, or more to the point you don't have £1,500 spare, you'll be left carrying a box that cost you many thousands of pounds a few years ago and that will not now enjoy any future software development. I'm guessing (hoping) there's no time limit on this upgrade. For those with lots of spare money you can upgrade your CPU and ICON remote (£3,215) or just the CPU (£1,740) – this is on top of the £1,500 mainframe upgrade…

On balance TC's choice of upgrades seems a fair one and I applaud its efforts to find an affordable and quick way (it fast tracks upgrades through the factory) to bring its core clientele into the future with it.

As for those looking to purchase a brand new MkII, it's worth saying it's worth every penny, if it's what you're looking for. It does what it does brilliantly, sounds and looks superb, but isn't meant for everyone… it's top of the tree stuff.

Where Do I Stand?

I sat with Danny and Sam and chatted briefly about their thoughts and experiences, and while we were all deeply impressed we were just left with the question of… 'how it would fit into our world?' Speaking personally, as the owner of a TV post-production facility with four sound studios – I would need four of these to keep all the studios identical, which they need to be. That's £40K+.

So what I can say with complete confidence is that this isn't something that would fit into my company's workflow practically or economically. TV budgets simply don't allow studio playtime, and frankly most TV speakers do not reflect beauty in the same way that modern cinema does, so too much super high-end kit is simply an expensive luxury.

That's not to say it's not perfect for studios/engineers, etc, with different priorities and budgets, especially those who don't already own lots of classic (or modern, for that matter) outboard and comprehensive plug-in libraries. The MkII really is the complete all-in-one solution, but it would make much of your other signal processing kit redundant if you used it fully.

For me the beauty of the modern DAW is its completeness, no need to ever back up more than one thing…. i.e., the session you're working on. I don't want to have to run the 6000 MkII on MIDI or a timecode input that chases my DAW output and back up the automation seperately because I know it'll get lost or, more likely, forgotten. For me, backing up outboard automation and 'scenes' is only fun if the option is being eaten by a shark.

If you have a need for the stereo to 5.1 up-mix function, the brilliant limiters, beautiful reverbs, EQs, and extra bits and bobs, noise reduction algorithms, and various types of signal metering and measurement in one box, then this may well be for you. It also has bags of potential in the live production disciplines, and where the DAW isn't the centre of your universe – such as in cinematic finals where it's mostly you and a console. And MkI owners may not be able to resist the upgrade deals. I know I've been harsh in my appraisal of its potential in my own facility – but make no mistake it's very, very good. If you buy one and have time to squeeze everything out of it, I know you'll love it… AM

INFORMATION

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PRODUCT SAMPLER

Recorders

When you work with a recorder, you have to be able to rely on it, like how it works, and not be ashamed to get it out in company. If your old one is causing you angst, have a look at our product sampler for ideas on what to get next.

The R-44 is one of **Edirol**'s most popular recorders, with four recording channels of uncompressed audio selectable at 16- or 24-bit depths, plus 44.1 kHz and 192kHz (in stereo mode only). The latest software update (version 1.05) enables users to add effects in the pre record mode, provides updates for the BWF marker format, improves shutdown times in some modes with SD cards, and allows smoother overall workflow through minor bug fixes.

www.edirol.com

HHB states that its popular FlashMic is the world's first digital recording microphone, and its introduction has garnered support around the world due to its portability and convenience. The four different models combine a studio quality Sennheiser mic capsule with a broadcast quality Flash recorder, and provide high-speed USB file transfer or several audio formats, including linear 32, 44.1, or 48 kHz, MPEG 1 Layer 2 encoded audio (128-192 kpbs) or broadcast wave.

www.hhb.co.uk

Bosch-owned **Klark Teknik**'s DN9696 high resolution audio recorder utilises a standalone hard disk to capture 96 tracks of 96kHz audio at 24-bit. With nine hours of internal storage, the DN9696 can be used to store live recordings for mix engineers requiring a virtual sound check. The unit reflects some of the unique features of Midas' digital audio systems such as POPulation groups to view, colour, and edit tracks, plus an 'Input Sheet' for quick naming of all tracks.

www.klarkteknik.com

The **Fostex** PD606 is the company's flagship multi-track location recorder. This eight-track unit records to either hard disk or DVD-RAM and features a six-channel mixer, comprehensive monitoring facilities, and extensive time-code functionality and compatibility, nine-pin control, up to ten seconds of pre-record, and dual battery V-mounts with intelligent switching. The unit also has a 99 cue point memory, Avid compatible EDL creation/editing and slatte tone generation.

www.fostexinternational.com

The RADAR V S-Nyquist from **IZ Technologies** is a 24-channel digital recording and playback system powered by the Adrenaline Plus recording engine. It features 24 channels of S-Nyquist 192kHz analogue I/O and dual-disk recording in BWAV format for instant backup and DAW compatibility. Each RADAR V system comes with a 24-channel Meterbridge and a Session Controller with jog wheel. The VGA output provides a GUI displaying 24 meters, SMPTY counter, edit and locate markers, waveforms, project settings, and system status.

www.izcorp.com

Korg has added a new handheld recorder to its MR series of DSD digital recorders – the MR2 High Resolution Mobile Recorder. The MR-2 records in the ultra-high fidelity DSD format, using a 2.8 MHz sampling rate. Using the included AudioGate software, this original datastream recording can be re-purposed into nearly any audio format with minimal fidelity loss. For job-specific recording, the MR-2 can also record in any of the popular multi-bit formats, from MP2 and MP3 up to 24-bit/192 kHz.

www.korg.com

The **Fostex** UR-2 is a rack-mounted 24/96 stereo recorder and playback device with two SD (and SDHC) slots and a USB connector for media. The unit features balanced, unbalanced, and digital I/O, plus a front panel mic input with phantom power. Playback features include remote, front panel, keyboard, foot-switch, remote pot, and RS232 control, plus CSV playlist files. It employs the FAT 32 disc format, making it easy to process file transfers to a DAW. Also available is the EP-CT1 instant start controller.

www.fostexinternational.com

JoeCo's 1U, 24-track BlackBox Recorder boasts simplicity of operation, low cost media, and no moving parts. According to JoeCo, the recorder is "designed specifically to take the hassle out of creating top quality multi-track recordings." Utilising ordinary USB drives means media can be replayed in the auditorium or easily transported to a DAW for further processing. The unit plugs straight into a console's insert points, recording directly from the mic amps to provide replay of virtual sound checks.

www.joeco.co.uk

The MicroTrack II from **M-Audio** provides two-channel WAV (BWF) and MP3 recording and playback, plus simple drag-and-drop file transfer to PC and Mac. Using CompactFlash or Microdrives ensures flexibility and expandable storage, while the long-life lithium-ion battery provides hours of operating time. Other notable features include extended input gain range, an analogue input limiter, and recording of files beyond 2GB in size. MicroTrack II can be used for a wide variety of applications including field recording, capturing live shows, songwriting, and in educational settings.

www.m-audio.com

The PMD671 Professional 24-bit Digital Audio Recorder from **Marantz Professional** offers one-touch, non-stop, PC-compatible recording. This solid state device can record audio files to Microdrives or CompactFlash cards with just the flip of a switch. Designed for compatibility with MP3, MP2, BWF, and WAV formats, the PMD671 has 40 assignable quality settings as well as a File Allocation Table (FAT32) for future multi-gigabyte file capability. Features include non-stop recording with six hours of battery life; menu-driven remote operation; and an EDL marking system.

www.d-mpro.com

The **Roland** R-09HR Wave/MP3 recorder is a lightweight, professional high-definition recorder, and is the flagship of Roland's R-series recorders. It offers 24-bit/96kHz linear PCM high-resolution, low-noise recording, with a high-grade, high-sensitivity stereo condenser microphone built in. The recorder features the newly developed Isolated Adaptive Recording Circuit (I.A.R.C) and records to SD or SDHC memory card. Other features include a large, wide-view OLED display; a built-in preview speaker; and high-speed file transfer via USB 2.0.

www.roland.com

The MT-128 Tap(e) Machine from **VB Audio** is an easy to use and secure hard disk multi-track recorder/player that can be configured with up to 128 channels of I/O (analogue, MADI, AES-3, or ADAT options). It supports Wordclock, Video Sync, and timecode via optional LTC I/O, RS422, or MIDI (MTC). The MT-128 is delivered as a turnkey computer and with15-inch touch screen. The picture shows the InnovaSon-intergrated version.

www.vb-audio.com

Mayah has brought out a successor to its digital recorder, Flashman. Flashman II adds the ability to simultaneously record and transmit audio back to a studio. It records to SD cards and USB sticks, and supports most modern networks and interfaces, with WLAN, UMTS/3G, and Ethernet all catered for. The recorder also provides a wide range of coding algorithms, including MPEG 4 HEv2 and MPEG 4 AAC ELD. Flashman II automatically recognises and connects to almost any audio codec and format worldwide.

www.mayah.com

SADiE's powerful and flexible LXR2 location recorder is designed to suit a complex variety of remote recording applications. Sampling rates up to 96 kHz/24-bit are supported on up to 64 channels using the MADI interface, or on 48 balanced analogue inputs (line level or phantom powered mic ins). The LXR2 is supplied with SADiE Multi-Track Recorder software. Sessions created in Multi-Track Recorder are fully compatible with, and may be opened in, SADiE 5 or 6 software.

www.sadie.com

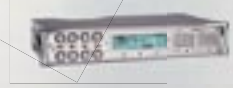
Yamaha has brought out the compact, lightweight W24, a portable recorder featuring a large dual microphone assembly and a wireless remote control. The remote control allows the recorder to be positioned in the optimum recording location and then operated from anywhere. Operating on a single alkaline AA battery, the W24 offers up to 38 hours of PCM recording and 56 hours of MP3 recording. It has a built-in 2GB flash memory, providing three hours of PCM recording time, or 13.5 hours of MP3 recording time.

www.yamahasynth.com

The classy **Nagra** LB is a two-track recorder designed for broadcast applications, but it is just as at home in live recording or music production environments. Ethernet and Bluetooth connections enable recordings to be sent straight to the studio, while premium quality mic inputs with integrated vortex filters ensure pristine audio quality. The inputs are equipped with traditional NAGRA microphone pre-amplifiers for dynamic and phantom +48V microphones. Recording formats are PCM linear or MPEG compressed BWF files.

www.nagraaudio.com

Sound Devices' 788T-SSD is based on the 788T. It is augmented with a 256GB solid-state hard drive (SSD), enhanced data transfer speed, and improved durability, which makes it "nearly impervious to shock". The SSD can record over 60 hours of uncompressed, 24-bit, eight-track audio, while eight full-featured mic inputs and twelve tracks of recording guarantee an impressive number of inputs. When connected to Mac OS, or Windows computers with high-speed USB or FireWire 400/800, the recorder functions as a high-speed mass storage device.



www.sounddevices.com

The **Zaxcom** ZFR200 audio recorder is designed to act as an ultra-compact and lightweight replacement for wireless microphones. It records on microSD cards and features an integrated SMPTE timecode reader/generator. The unit can receive remote control and timecode signals via Zaxcom's IFB100, the ZaxNet 2.4-GHz wireless network, or a manual timecode jam. The ZFR200 can output audio as either 24-bit/48kHz timecode-stamped broadcast wave files or timecode-stamped MP3 files. Each unit is powered with a single AA battery.

www.zaxcom.com

The **Olympus** LS11 Linear PCM Recorder is the successor to the LS-10, and fits comfortably in the palm of the hand for maximum freedom and flexibility. A new editing feature allows files to be edited in the device, while Audio Recording makes sure no important sound is lost by switching on automatically once a certain audio level has been reached. In addition to extra long battery life, the LS-11 has 8GB of internal memory, plus an SD card slot to extend storage options.

www.olympus.co.uk

The DR-680 portable recorder from **Tascam** can record up to eight tracks to solid-state SD card media at 96kHz/24-bit broadcast WAV quality. Six mic inputs provide phantom power and 60dB of gain. The six microphones can be recorded along with a digital S/PDIF source for an eight track recording. Inputs can be monitored using a built-in mixer with level and pan controls for each input, and the stereo mixdown can be recorded along with the six microphones.

www.tascam.com

The R24 from **Zoom** is a compact portable music creation system with four key functions: a 24-track recorder, an audio interface with eight ins and two outs, a DAW control surface, and a drum machine/sampler with pads and a loop sequencer. It has simultaneous eight-track recording capability that allows users to make recordings of multiple sound sources. The undo/redo functions can be used to cancel the last recording operation and restore the previous state.

www.zoom.co.jp

video guide

A Sound Pro's Guide To Video

Colour Grading Part 6

KEVIN HILTON begins this month's look at colour grading on the theme of inspiration and development...

Products and technologies are sometimes born out of inspiration, the spark or idea that leads to the creation of something that did not exist before. More often they come from an existing concept or device being improved or enhanced. As this can result in something better than what went before, it is no less innovative a process than creating from scratch.

The majority of development for stand-alone telecine controllers and colour correctors falls into the second category. The starting point would appear to be Cintel's TOPSY (Telecine Operations Programming SYstem), introduced in 1978, but the original inspiration can be traced back to earlier systems, including the Tarif (Technical/Television Apparatus for Rectification of Indifferent Films), developed by the BBC; the Chromaloc Patent, which was filed by Armand Sarabian of the former Teletronics facility in New York and presented the idea of interconnected potentiometers to alter colours in a TK-28 film chain; the 1978 Rainbow Patent, also held by Sarabian, which went further than Chromaloc; RCA's Chromacomp; and the Philips Variable Matrix.

Tariff Control

Tarifs were originally controlled manually by an operator, but in 1974 DT Wright of the BBC Research Department published a paper detailing an automatic Tarif to deal with poor quality film for news broadcasts. In his summary Wright outlined that the equipment was designed to make automatic frame-by-frame corrections of lift, colour balance, and gain errors in the red, green, and blue (RGB) colour separation signals of a colour television transmission.

He went on to describe the principles of correction: to set the blackest part of each colour separation signal to a common preset reference level, make the mean levels of the three separation signals equal, and hold the maximum luminance value of the output signals at a fixed magnitude.

Wright said that automating this process might not give a finished product that was as good as could be done manually by a trained operator but that there were significant advantages to be had from fast corrections for each scene.

By the time of Wright's paper, manual Tarifs had been used by the BBC since the mid-1960s, when colour was becoming part of British television broadcasting. A panel was installed on the output of a telecine channel, giving controls for adjusting parameters in the RGB colour separation signals.

This allowed the operator to alter the master gain and master lift levels, as well as overall gain and black-stretch in the three individual colour separation channels. Specific controls enabled the colour of highlights and shadow areas to be adjusted; selective lift-control could also be carried out in some instances, either in addition to selective black-stretch control or instead of it.

Manual Tarifs were effective for their time, particularly if the operator had enough opportunity to rehearse shots. If there was no chance to try out alterations beforehand, viewers could notice major transitions. To provide greater flexibility a pre-programmed film scanner was proposed in a 1972 EBU paper; this had Tarif settings recorded on punched computer paper-tape, each corresponding to relevant frame numbers. While this made for faster changes between scenes, which reduced the possibility of transient effects being noticed, rehearsal time was still needed to find the optimum settings and identify the frames where a poor quality sequence begins and ends.

Time is precious in news, so not even pre-programmed Tarifs were an ideal solution to the problem. This led Wright and the BBC Research Department to look into automating the rectification process. Wright proposed that if fixed rules could be applied to determine how corrections were made, it would be possible to automate those changes field-by-field (see glossary). The result would be an output signal corrected according to the rules during a single field period.

Wright acknowledged that set rules could not always be made to give optimum correction, so there was a degree of practical compromise in the system. Experiments into automatically grading negative film carried out by the BBC Research Department using the processing channels of a flying spot film scanner demonstrated that subjective improvements in picture quality resulted from approximate corrections being made immediately after the change of each shot.

The correction rules used for the automatic Tarif comprised three controls for the lift and gain settings of the three colour separation signals: the first involved selective control of lift; the second was concerned with selective gain controls for colour balance control; and the third gave overall gain control to give a constant output level.

The BBC began using this system during the mid-70s and with the growing demands of news broadcasting, improvements to the automatic Tarif were proposed in 1976. By this time video was firmly established in TV production, although it was still an expensive commodity. Editing was now a straightforward process and videotape was part of post-production, either for tape for tape work or where film was the source and the eventual master medium.

With growing pressure on the post-production of dramas and documentaries, producers and facilities staff looked for more efficient means of dealing with raw footage; this involved not just correcting errors in the pictures but producing the best possible images. By the late 1970s BBC Capital Projects was looking for a colour control system that offered more than Tarif and began discussions with manufacturers, including Cintel.

From this came the Cintel TOPSY, which was intended to be used with the MkIII telecine. Like the automated Tarif it recorded colour correction settings on punch hole computer tape and was probably the first commercially available remote control programming system for any TK machine.

Although a major advance, TOPSY was criticised for being unreliable and not easy to use, which led to some major figures in UK post-production to look for alternatives. Mike Walker, a colourist at the Moving Picture

GLOSSARY

Field

A key component of television and video pictures, the field is the individual scan of, first, the odd and, then, the even numbered lines in a frame. Because of this scanning takes in only one half of a picture in a single pass, making one field, which is composed of the odd numbered lines. To finish the process and produce a whole picture the even numbered lines are scanned and then interlaced, which reduces the amount of flicker in an image. A complete picture is made up of two fields, odd and even. The PAL colour coding system used in the UK works with 625 lines and the American NTSC format at 525 lines. The field frequency of PAL is 2x25 = 50Hz, matching the power supply, while NTSC is 2x30 = 60Hz.

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Colour Grading: Part 6

Company (MPC) in London during the early 1980s, was working with TOPSY but had his own ideas about telecine control. Through a mutual friend he met Steve Brett, a freelance TCB designer who had previously built analogue synthesisers, and Arthur Sutton, who worked for the BBC and was in charge of lighting for Top of the Pops.

Working at weekends, with Brett looking after the hardware and Sutton in charge of software, the trio came up with a control system that eventually became the Pandora Digigrade in 1980-81. This was the first telecine controller to be operated by tracker balls, rather than joysticks, as was the case with the Wiz, which evolved into the da Vinci Classic.

The BBC asked for a simplified version of the Digigrade, which resulted in a different user interface and, ultimately, a parting of the ways between those that had originally developed and marketed the system. Stuart Grey, who had been handling sales for Pandora, formed a new company, Digigrade Systems, with Arthur Sutton.

At Pandora Steve Brett brought in Martin Greenwood to design the software and Ian Rosher to deal with sales, with engineer Dick Vessey, who was also involved from the beginning, building the machines. The company has carried on since then with that core personnel.

The Pandora Digigrade was used in London by a number of leading post houses; MPC, of course, but also SVC and broadcaster ITV. With advances in telecine technology, particularly the introduction of CCDs with the Bosch FDL-60 in 1979, manufacturers and operators alike were looking for more sophisticated ways of controlling the transfer machines.

BTS, the Bosch/Philips company developing the FDL range, was looking for a simple means of controlling its machines and began discussions with Pandora. In 1984-85 Pandora launched the system that is still synonymous with the company and has almost become its generic name: the Pogle. This evolved from the Digigrade and like that product it is not a colour corrector but a telecine controller that remotely operates the primary colour correctors on the TK machine.

The Pogle workstation is still the foundation of today's Pandora colour correction systems, linking linear equipment, including telecines, tape decks and noise reduction devices, with non linear storage, using the YoYo data management program. It provides the operator with an interface based on control panels, with data shown on readout displays.

A major turning point for telecine development and a considerable influence on the design of the Pogle came in 1989 with the introduction of the Cintel URSA. This all-digital TK machine used RS422 serial controllers, rather than the voltage control knobs that were part of older telecines.

In the mid to late 1980s Pandora differentiated itself from da Vinci by not having its own secondary colour corrector, which was a major feature of the Classic and its progenitor, the Wiz. This could be seen as a commercial mistake, with customers going to the competition for a more complete package, so Pandora built the RCA Chromacomp into Pogle to deliver secondary correction.

The September installment of the Video Guide will look at the development of Pandora's proprietary colour correctors and how da Vinci responded to this.

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SPOT THE DIFFERENCE
The picture on the right shows the Holophone H3D 5.1 surround sound microphone. Equipped with 5 DPA capsules it is now available for hire from Richmond Film Services for £40 a day. The picture on the left shows a toy dinosaur.*
For more information on the Holophone microphone call us on 020 8940 6077, or you can visit our website at www.richmondfilmservices.co.uk.
RICHMOND FILM SERVICES
*We do not hire toy dinosaurs

news

Colour correction specialist Digital Vision has introduced new software for its Nucoda grading and finishing system. There is also a new structure to the product range, with the Nucoda Film Master workstation at the top-end, starting at £90,000, with the Nucoda Fuse aimed at middle market DI grading and dailies below it.

Martin Bennett, vice president of marketing at Digital Vision, comments, "It has always been our goal to provide more of the company's innovative image science at multiple price points and with the 2010 product and software release we have certainly achieved this. Whilst we have been highly regarded for our premium solutions this new product range allows customers at all levels to benefit from our technology with an array of solutions and price points that address specific tasks for image grading, finishing and restoration. Add to this our continued commitment to develop and include industry-leading tools for stereoscopic 3D workflow and image enhancement, we will enable our customers to stay ahead of the curve, delivering premium content to clients."

Also part of the 2010 software release is Turbine, which allows Nucoda operators to render a number of projects and compositions in the background while getting on with the main work, as well as tools for stereoscopic 3D, including viewing modes, I-Keyer, a colour isolation tool, and enhanced file formats, allowing systems to work with the Arri Alexa camera, MFX oPA1a publishing and ALE file export.

"We consider these announcements to be a significant milestone for our company and the industry," says Bennett. "We are releasing powerful solutions and opening up our product line to a wide range of users. This release marks the beginning of a number of strategic initiatives from Digital Vision."

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dark/RooM

Working in the audio industry, you probably think your sense of hearing is pretty good (if perhaps a bit battered by years of sonic abuse). Would you be able to rely on it if you lost your sight, though? You can test that notion by booking a meal at Dans Le Noir. The unusual restaurant, with branches in London, Paris, Barcelona, and New York has a lit bar and lounge, but dinner itself is served in complete darkness. Of course, eating in the dark calls into use all your other senses, not least taste and touch, but it is quite a surprise to find out how difficult it is to rely on your hearing alone for conversation in a noisy restaurant with 60 covers. After leaving all potential sources of light such as cigarettes, lighters, watches, mobile phones or cameras, diners are guided in and seated at tables of six to eight people. The waiters, who lead you in to the pitch black room, are blind. Food and drinks are ordered beforehand, with the food coming from a series of mystery menus. At the end of the meal, once you have emerged blinking into the dimly lit bar, guests are encouraged to try and guess what it was they ate, and are then told what it was and shown pictures of what it looked like.

Dinners in total darkness are said to have existed from the late 19th century. In the 1990s, researchers like Andreas Heineke in Germany and Michel Reilhac in France have developed the concept across Europe, setting up a range of experiences such as dining, dark bars, tactile and audio exhibitions, art performances, all in complete darkness. Dans Le Noir was opened in Paris in 2004, and the London branch is the largest restaurant of its kind in the world.

www.danslenoir.com

shangha1/N1GHTS

Don't forget that you still have a chance to win an all-expanses-paid trip to Shanghai with Audio Media and sE Electronics. As part of your trip you will get the opportunity to visit sE Electronic's design and manufacturing plant, plus two musical centres of excellence - the Shanghai Philharmonic and the Shanghai Conservatory of Music. All you have to do is answer a simple question and send your answer to us by July 30, 2010. Remember you must be eligible and able to travel to the People's Republic of China between 8-19 October. The question is: what is the current capital city of the People's Republic of China? Send your answer, name, address, phone number and email address to ChinaTrip@audiomedia.com, or by post to sE China Competition, Audio Media Magazine, 1 Cabot House, Compass Point Business Park, St Ives, Cambridgeshire, PE27 5JL, UK. Make sure your entry arrives in our office by July 30, 2010.

www.seelectronics.com

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THE INTERNATIONAL BUYER'S GUIDE

A SPECIAL PROMOTIONAL PUBLICATION FROM THE NEWBAY MEDIA GROUP

LIVE SOUND TECHNOLOGY 2010

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Welcome

Welcome to *Live Sound Technology 2010*, an overview of the live sound product market for the sound reinforcement professional.

This first live sound supplement from Audio Media magazine is an exploration of current thinking and hot products in the performance audio industry. This area has some very specific needs, from bullet-proof reliability and redundancy, to maximum emphasis on ergonomics and immediate access to functionality. An audience makes all the difference – you can't go back and try again.

Running parallel with these core requirements is the stunning advances in sound quality that have been made in a relatively short time. The consumer is demanding more and more from live performance, and the manufacturers and operators are delivering. The new generation of digital consoles, plug-in processing, progress in PA and line array, sophisticated audio and comms networking tools, and much more are all contributing to rising standards in sound reinforcement.

We hope this guide will serve as a good foundation to your 2010 live sound equipment specifying, whether you're creating a shopping list for your theatre, a rider for a forthcoming tour, or an investment plan for your rental operation. To help set the scene, we've commissioned independent articles on four distinct technology areas: consoles, processing, line array, and wireless. Then we present product expos from ten manufacturers, all with high-end technology solutions specifically for sound reinforcement. Lastly, we present a directory of over 200 selected manufacturers directly relevant to the live sound industry.

This promotional guide has been produced by Audio Media magazine (audiomedia.com), in association with two other NewBay Media titles – Pro Audio Review (proaudioreview.com) and Pro Sound News US (prosoundnews.com). All three publications concern themselves with the business of audio production on tour, on location, and in the studio, for professional creatives, operators, technicians, and engineers everywhere.

The NewBay Team

AUDIO MEDIA
www.audiomedia.com
(UK) Tel: +44 (0)1480 461555 - Fax: +44 (0)1480 461550

Editor
Paul Mac
p.mac@audiomedia.com

Editorial Manager (Europe)
Lanna Marshall
l.marshall@audiomedia.com

Sales
Graham Kirk
g.kirk@audiomedia.com

Design & Production Manager
John-Paul Shirreffs
jp.shirreffs@audiomedia.com

NewBay Media
www.nbmedia.com

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On The Rack
Outboard Round Table

With the plethora of plug-ins available and built in FX loaded into the digital consoles of today, do live engineers still feel that outboard is necessary? If so, what do they still carry and why do they carry it? We spoke to four top FOH engineers to find out…

Gert Sanner: FOH Engineer for Deep Purple

What outboard do you have on tour with you at the moment?
I have everything I need built into my desk, so all I ever carry is an Ipod! I use it just for the intro music and the outro music at each show; I play about 30 seconds of music at the start and then a Roger Glover [bassist, Deep Purple] at the end. That's it!

Why do you think it's still necessary then for some engineers to carry external processing with them on the road?
I think it totally depends. Some artists are quite particular and want to recreate what they did on an album and quite often they want to use the same gear. For example, I know that Tori Amos does that. Her husband [and FOH engineer, Mark Hawley] uses exactly what he used in the studio for live work. Then big Mick [Hughes, Metallica] does the same thing; he has a few bits and pieces in his rack that were used in recording sessions because there's no other unit that does the job.

But you're happy enough without?
Yes, because all of the onboard processing is excellent and easily accessible on the Vi6. I think it's fair enough to do it when you try to recreate something from an original recording, but as far as compressors, gates and FX are concerned, I don't think it's worth it because of the AD conversion you introduce. It can cause latency issues within the buss structure, and I don't think you gain anything from that.

On the flip side, an engineer never wants to lose all of his comfort features. I never want to change more than one thing at a time, so if I had a new band, I probably would only take equipment I knew very well, yet if I know the band very well – as of course I do with Deep Purple - then I am quite willing to check out some new equipment. Looking at it this way, I can see how some engineers might think along those lines and maybe take their favourite rack compressor with them to a show because they know it works really well for a vocal, but quite often you find that after people do that on a few weeks of a tour, they start phasing the gear out.

Alain Courieux: FOH Engineer for Jean-Michel Jarre

So what's your set-up and what outboard do you use at the moment?
I use the SD7 with the new software and my outboard consists only of a Lexicon 960 reverb and a Yamaha DME64 for the delay; I need four stereo delays and there aren't quite enough within the console which is why I carry the DME64. The effects built into the SD7 are of a very high standard though and in my opinion it is one of the only digital consoles that actually sounds like an analogue one. For this type of show, I use so many compressors and noise gates that there wouldn't be space for all the racks I would need.

So the delay is due to lack of space within the console FX? What about the reverb unit?
I am just such a big fan of the Lexicon that I have to have that on a gig. It is so reliable and just so good; that is just my personal preference. If I had a vocalist – which obviously I don't because Jean-Michel's performances are fully instrumental – then I would definitely carry a very high end compressor and a top quality pre-amp...

Jon Sword: FOH Engineer for The Feeling

What outboard do you carry?
I don't carry any outboard at all. The whole digital thing works on layers. Let's take a Vi6: you've got 32 channels – that's one layer - and at the push of a button, the console will bring up another layer, which is another 32 channels, so there's a lot of changing of scenes to be concentrating on. Because I've got all the FX I could ever need built into the console, it eliminates the need for a load of external outboard. It also allows me to focus my entire attention on the work surface of my console without having to keep glancing to my left or my right to adjust settings on individual rack units.

I am also at an advantage because I use the same desk very regularly with the same band [The Feeling] and because I have worked with that band for such a long time, I know their set inside out and know what's needed during each song in each show. I am able to store all my FX settings for everything so when it comes to the show, I can enjoy mixing it and concentrate on getting the best sound. I mix very 'hands-on'; it's like playing an instrument to me, so it's important that I can give it my full attention.

"If, for example, you were working with a band that required a certain special sound or maybe you had certain trusted toys of your own that you felt comfortable using, then you should definitely carry your own outboard. That way, you're always in your comfort zone..."

And why do you think some engineers using digital boards still feel the need for outboard?
Well, a lot of engineers have to use different equipment every single day as they work with a number of different acts and don't have the luxury of owning their own mixing console. I have had to do the same in the past of course using different PAs, different desks and different outboard. If, for example, you were working with a band that required a certain special sound or maybe you had certain trusted toys of your own that you felt comfortable using, then you should definitely carry your own outboard. That way, you're always in your comfort zone, which is very important to a live engineer.

Patrick Demoustier: FOH Engineer for Night of The Proms, Simple Minds and Kane (popular Dutch rock band).

What's your opinion on plug-ins for live work, and how many do you use?
I am not really a big fan of plug-ins; I like the real things. There are some good ones on the market, but I still think the platforms we are running them on are not as good as we could have, given the advances in digital technology.

So what's the most important piece of kit in your outboard rack at the moment?
For vocals I always use a Manley VoxBox; it is outstanding. Not only does it have a great pre-amp, compressor and EQ, but what makes it so stand-out is its frequency-dependent compressor. For live sound, this is a huge advantage. You can compress only the 2-3k regions in the vocal through the PA, so when you mix loud, instead of the compressor becoming more aggressive, the more you compress, the softer it gets – and your voice is still where you want it to be in the mix. I recommend the VoxBox to every engineer when they tell me they have some kind of problem with their live vocal results - and when they try one, they always buy one!

For me it is the right tool for the vocal and I cannot do it without it. Even if I were to use a Neve unit with the very best compression, I think although it may be an extremely good compressor in the studio, for live work, having the frequency-dependent compressor makes it so easy to mix. Since I first tested the VoxBox, I have used it on every single show.

What about on the instruments? Are there any other essential tools you carry?
Yes. On the mix, I use the Manley Massive Passive EQ and I have a Crane Song compressor behind them because it has an extra feature; it is an analogue compressor limiter but it also has a bit of brains about it, so if you were to come across a smaller PA system or if you were in a situation where you have DB limits where there is a maximum level that you cannot exceed, then you are able to set the limiter to that level. The limiter will say to the compressor 'help me to put a recall on the mix and start compressing a little more softly so that we can avoid limiting hard', so in the mix you don't even notice a limiter is working. This Crane Song is not something I see a lot when I'm on the road, but I always use it to mix because the results are so fantastic.

So, as good as digital consoles are, you still find that you need that external equipment to get the best results?
Yes, especially because I like to do things before I go into the desk. I run an analogue line into the VoxBox, then after processing it analogue, I go into the desk. I do the same thing for anything with a lot of dynamics, such as the kick, the snare, the hi-hats and the bass guitar. I use analogue pre-amp EQ, then I go into the compressor and then I go into the digital console.

So digital is actually the third link a lot of the time? How much of the mix can you afford to input directly to the console, eliminating the analogue chain?
Quite a lot. In fact, everything that doesn't have so many dynamics: guitars, toms, backing vocals and keyboards. Things like that I can leave, but still the AD conversion is the most difficult thing.

But you're happy with the console FX when it comes to the reverbs and delays?
Yes, I am very happy. I own a Lexicon 960, which to me is the best reverb in the world, but I don't need to tour it any longer... The Lexicon is also heavy and 5U high as well as being quite fragile, so on all the shows I use the FX on the consoles for practicality reasons. To be honest, I think the FX are getting pretty close to the quality of the Lexicon now. Ultimately, FX is all about processing power and these days they have a lot of that, so they are very well equipped do the job.

Console Trends
Digital Console Technology

The best people to ask about trends in live digital console technology and what should be in the minds of R&D teams everywhere, are the rental companies operating at the front line...

It's no secret that digital console technology has come an extraordinarily long way since its introduction in the 1990s. Yamaha were first to break the mould back in July 2005 when sales of their popular PM5D console passed the 1,000 mark and since then there's been no turning back.

Now, with analogue well and truly by the wayside in most pro audio applications, digital console technology is continuing to evolve on what seems like a daily basis. Yan Stile of Canegreen knows better than most what's hot and what's not. "Reliability of digital consoles has greatly improved over recent years. All those terrible stories of bands losing a show are very rare now," commented Stile.

"With digital now being the norm, it is no longer looked at with suspicion and concern as these consoles have been rolled out and tried and tested. In the old days, racks and racks of outboard and four legged consoles would be an engineer's kingdom, but now it seems to be 'lets see how small we can get it.'

"Many digital consoles are now being used at festivals too. I actually saw a guy who did FOH sound for Scouting For Girls at the V festival last year. He came in with his little Yamaha LS9 and mixed an absolutely fantastic show, all on this tiny little desk. Footprint is a major thing for these guys – no doubt about it."

Stile has 10 Yamaha PM5Ds in his inventory which are constantly on the road. He rates them highly because of their standard copper multicore and likes the fact that all the decoders are inside the console. Also popular at Canegreen are Soundcraft's Vi6 and the Avid D-Show Profile.

"What is happening now is that all the big console manufacturers are developing much cheaper, sturdy and robust roadworthy consoles. DigiCo has the SD8, Avid has a lower cost version too - the Mix Rack was the first to appear in the budget market and it's a really good product. It's much like a PM5D really, so you just run CAT copper in and out, but I don't know where it's going to go next to be honest with you. What I do know is that utilisation is a major thing for us and if we can make more money out of our investments then obviously I'm going to be very happy."

Bryan Grant revealed which consoles are proving the most popular at Britannia Row at present and some of the advances he'd like to see in the future development of the digital console as a whole:

"The Midas XL8 and PRO6 are particularly popular at the moment; many engineers are very impressed by the audio quality. The Yamaha PM1Ds are always out too, but pretty much every manufacturer has a decent digital console now, so many of the boards are in demand."

"As a rental company of course, we'd like to see consoles coming down in price, taking up less space, and ideally being maintenance-free. We're talking to manufacturers and engineers all the time about incremental improvements in audio quality, packaging, and facilities. Obviously they're [engineers] only carrying a fraction, if any, of the outboard equipment that they used to. Consequently this takes up less space in trucks and venues, which is a good result from our point of view."

It would seem then, that some of the latest consoles launched at Prolight+Sound in Frankfurt in March of this year are sure to get the thumbs-up from all of the major rental companies as 'the new big' looks like it will take digital console technology to a new level.

Some things don't change; the main requests from live engineers are still dependability, top quality audio, and total reliability, with as easy a user interface as possible. But, with so many more advances in technology, including digital networks and touch screen user interfaces, the engineers are becoming more creative and more expansive in their requests and that's what needs to drive this industry and will probably drive the next generation of technologies.

Manufacturers are being driven to incorporate far more processing and onboard features than used to be available in most outboard racks. This simplifies the engineers work flow, allowing them to concentrate on their mix and ultimately improve the audience's experiences.

Obviously from a rental company's point of view, they want all the same guarantees and at the right price because they need to stock the equipment that the engineers are asking for on their riders. They need to make money on their investments and as long as there are no compromises affecting quality and serviceability, the more affordable (and compact) the desk – the better.

Off The Wire

Uncertainty over wireless frequency allocation and compensation for the disruption it will cause is a hot topic in the live sound arena. We ask two of the top UK rental companies – Britannia Row and Canegreen – about the potential impact.

"We've all got our eye on Ofcom; if they were to take away all of those frequencies then we'd have no more IEMs – what will happen to all the girl and boy bands? You know what, we might even have to go back to guitar bands!" said Bryan Grant of Britannia Row.

"Once again it indicates to me the attitude that the British establishment has to our industry. They regard us as a bunch of gypsies and cowboys even though the music industry helped the British economy in a way that very few industries have since the mid 1960s.

"It's the greed of the government cutting off the frequencies that leads to bad consequences for the British music industry that these politicians haven't even considered, but being politicians why am I not surprised? That fact of the matter is we would lose wireless, which would be a huge hit to take."

Yan Stile of Canegreen was particularly keen to point out the financial aspect of this saga. A good friend of Stile's is Duncan Bell of Autograph, leaders in theatre audio. Bell is steering the campaign group opposing Ofcom's legislation ['Save Our Sound'; a group of over twenty organisations] and understandably so. Autograph is reported to have spent £5 million on wireless technology over the years, 80 percent of which would become redundant if the legislation is passed. Because Ofcom have said they'll reimburse the estimated value not cost of redundant equipment, a company like Autograph could be hit particularly hard as some of their wireless inventory has been in use since the early 1990s.

Companies solely reliant on wireless technology, such as Hand Held Audio, would also be in a lot of trouble. Stile explained: "A company like them [Hand Held Audio] could live or die over this legislation; at the very least it will cost them a mountain of money. Those guys specialise in radio and if they're going to have their whole business upturned by government legislation then that is just not right."

Understandably, Stile thinks it would be crazy for the government to restrict legal radio frequencies more than they are now because as shows develop and become more flamboyant, they inevitably require more radio frequencies: "You can't have someone like Lady Gaga walking round with a bloody wire microphone in her headdress can you? She'd trip over!

"When I was first at Canegreen, we had no radio equipment at all, so it never used to be an issue to me. I find it ironic that they're not going to sell off the frequencies until after the Olympics because they need the bandwidth, which is a crazy thing; it's like government and taxation; you never really know the truth!

Save Our Sound

Save Our Sound is a campaign set up by 21 major organisations representing the British entertainment industry, calling on the government to provide an adequate funding package to support the replacement of equipment affected by the migration of radio frequencies. Ofcom will shortly sell off the radio frequencies used by the entertainment industry, rendering the UK's stock of wireless microphones unusable. Save Our Sound say that live music, news gathering, musical theatre, concerts, conferences and other events will become impossible to stage; and companies will go bust. The impact will be so severe as the pool of equipment for professional use is generally owned by small specialist firms and individuals, who cannot cover the cost of replacing their entire inventory. The campaign calls on the government to ensure that the funding package covers all affected equipment, and that the funding is based on replacing equipment with like-for-like alternatives.

www.saveoursounduk.com

"It's all about money at the end of the day. I think there's only one man that would have addressed it and that is Vince Cable – but he's got nothing to lose as he's never going to be in leadership. It all stems from the same lack of ability and the need to claw back money. The whole thing about politics is that there's just too much politics! The government should be run by Richard Branson or someone else who's pretty sharp and if you don't do the job then you get fired – simple as that.

"Their attitude is 'oh we can make £10billion selling off all these radio frequencies to the phone companies because they're nice people – let's do that and fuck the live entertainment industry – they'll be alright with a couple of frequencies!

"It makes me steam; it really does. The thing is, me and my colleagues at SSE are working our guts off to keep 80 people employed and help them to pay their mortgages and now they're fucking up our actual working environment."

Unless campaign groups like 'Save Our Sound' stand up and fight our corner, there's no guarantee that that the industry will be heard, and maybe some of the spectacular live concerts the consumer and the industry has become accustomed to could be a thing of the past.

Fine Line
Line Array Technologies

The move to line array has been one of the biggest changes in live sound over recent years. The inudstry is now well versed in the basics, but what about the state of the art? PAUL WATSON surveys three ways to make a line array and finds out what might be in store for the future...

Line array systems are prevalent in pretty much every live audio application. It could be as little as a couple of basic – and no doubt tired – speaker hangs in a grotty [but once great] music club; it could be incorporated into an easy-to-hide and state-of-the-art compact set-up in a theatre or house of worship; or it could be part of a huge arena or stadium rig.

Whatever the application, are the fundamentals the same? I spoke to three people intimately involved with the development and sales to find out what they believe makes a great line array system, how much work goes into making it great and what their approaches are to line array technology…

Luke Jenks, Meyer Sound

"A line array - in theory - is where everything is working together to form a coherent wave. It is actually something that has got a horn in it or a wave guide, which means it's a hybrid. The only way to create an actual line source would be – as Harry Olsen wrote sixty years ago 'infinitely small sources with no space between them in a line,'" said Luke Jenks, Director of European Technical Services at Meyer Sound.

"Line arrays are just speakers. OK, they're different in a way in the fact that you have these tighter angles, you have horns for each element, you have a very finite amount of vertical coverage on the HF, but a lot of the same things that it takes to make a good loudspeaker are exactly in line with making a good line array, such as the quality of the horn, the coverage, and what the horn is like at its edges.

"All of those things are equally important in a point source system – how well these systems combine. In our [Meyer's] case we're committed to build self-powered loudspeakers and the advantage of that is that it's something that works well in line arrays too."

Meyer uses a Ribbon Emulation Manifold (REM) which goes in front of its compression drivers, the aim being to keep the path from the driver to the edge of the horn as short as possible, achieving the performance characteristics of a ribbon driver but with the power and reliability of a compression driver.

A huge Meyer rig was used on a show I recently reported on [Manchester Central leg of Placebo's latest tour] and it featured a lot of hung subs. I was keen to get Jenks' opinion on the advantages of adopting that technique. He revealed: "Hanging subs is key – as a system designer especially – and during festival season in the summer months. Everything in audio is to do with time and speed. Let's say you have a line array flown 14 metres up in the air and the subs are stacked on the ground. There are several things that are a drag about that: Firstly, the kids that wait outside for hours and then come running in straight to the front and end up standing in front of 20 subwoofers and get killed by it! And secondly, at FOH position, where you are 40-50 metres back, you have a pretty much equal distance to the subs as you do to the mid-his, but as you go closer to the stage, you start getting closer to the subs than you are to the mid-his so there is no accurate way to time it; it's always going to be a compromise."

> "I think there's going to be more power, more possibilities and more processing; DSP is going to grow and transducers will become stronger. But the things that will make the biggest impact will be evolutions in design and the industry letting you do things a little differently..."

"Now, if you fly the subs directly behind the main array, then everybody has the same time relationship always – no matter where they are – it's like making a point source out of line arrays. We are able to give an even spectral response so everybody can now get a really good show."

I asked Jenks what he thought the future might hold for line array technology. He responded:

"I think there's going to be more power, more possibilities and more processing; DSP is going to grow and transducers will become stronger. But the things that will make the biggest impact will be evolutions in design and the industry letting you do things a little differently - like flying subs, because when you first introduce that, they don't want to have to deal with hanging the extra weight - you know, there's resistance to it from a production side. But when they see the benefits of the system then they come round to it.

Also, every good system has a good person behind it too. System engineers are now so important, so it's still very much about the people."

Stefan Ecalle, L-Acoustics

I spoke to Stefan Ecalle, Marketing Director at L-Acoustics to get his opinion. He revealed:

"Line arrays are based on the theoretical work that was published in the WST AES papers back in the early 1990s. These papers outlined a set of five conditions including the generation of cylindrical wave front and inter-element angles within each element of the array. L-Acoustics has defined the physical conditions for coupling elements. We are applying and building our loudspeakers following these criteria.

"Over the years we have of course improved our technology, especially in the horizontal radiation characteristics. We have gone from what we call the V generation to the K generation: the V shape is basically an arrangement of the mid and hi transducer section and the K is a new arrangement that actually comes from the days we introduced KUDO that we followed with the KIVA and more recently KARA loudspeakers.

"With these new transducer arrangements, we actually have a much better control of the horizontal directivity; that's what we are trying to offer."

Ecalle explained that controlling each element in the audio chain is a huge priority from an L-Acoustics point of view.

"L-Acoustics mission is not to build just the speaker itself – the enclosure – but to offer turnkey assistance that includes the electronic platform with the right preset libraries in order to protect and filter the system in the most efficient matter.

"It's about offering the prediction tools like Sound Vision and it's about reducing the uncertainty in terms of human factor – training people. We have a scientific background and in a scientific experiment you want to make sure that every step and variable is controlled.

"We do exactly the same with our systems and that's why we offer turnkey packages; we can't afford to let one variable out of control. So, this system will deliver its predicted performance as long as you put in the right amplification, the right signal processing and that you run your acoustic prediction. Whether it is software, hardware or services, it's all part of our approach. It's something that has transpired in the company's policy over the last four years and we're sticking to our guns."

"Line arrays are based on the theoretical work that was published in the WST AES papers back in the early 1990s. These papers outlined a set of five conditions including the generation of cylindrical wave front and inter-element angles within each element of the array."

Ecalle believes the future is bright for L-Acoustics. He concluded:

"The new improved KARA is the replacement for the standard dv-DOSC. It's a similar format, lighter weight, and more importantly at least a one step improvement in every possible domain to its predecessor."

Paul Bauman, JBL Professional

Paul Bauman of JBL said their range of in-house facilities sets them apart when it comes to developing line array products. He commented:

"At JBL, we're designing and manufacturing our components, which makes us unique among a lot of manufacturers. We have the opportunity of customising the component to suit the application. For example, the new SubCompact 4886 has a brand new 6 ½ inch proprietary differential drive, which means two voice coils, and that's something unique to JBL. It has a brand new 2 ½-inch device as well. So, while we start with the speaker design, we can go down to the component level and really optimise the component performance for the product and the application.

"Also we have the new mid hi wave guide technology: the AV6. It's a new approach compared to the existing VerTec models. It's a new generation technology for basically converting the output compression driver into a flat wave front on the exit of the device.

"That's really what separates the men from the boys - how flat your wave front is and then how much variation in respect of whatever target wave front you're trying to create, so with a variable curvature line array system, a lot of times you're trying to create a flat wave front and then you're shaping the array to get the coverage of the system the way you want it to be.

"The sort of criteria you need to satisfy to make speakers couple properly and behave like a line source is fairly well understood these days, but at the end of the day it is a speaker and it has to sound good – you can't ignore that."

"Then there are restrictions on how much angle you can have between the boxes based on how tall the cabinets are – and that's if you're creating a flat wave front to start with. So there's a link between those two things and some manufacturers pay more attention to that than others. There are well documented rules that you need to satisfy so I think all the history as to how a line array works has sort of become popularised over the years.

"The sort of criteria you need to satisfy to make speakers couple properly and behave like a line source is fairly well understood these days, but at the end of the day it is a speaker and it has to sound good – you can't ignore that."

Bauman also said that the luxury of being able to work with other brands within the [Harman] group has been extremely beneficial and has allowed JBL to offer a complete and unique package.

"I think what's as important is what's going on at the system level and this is where the new V-Rac project we've collaborated with on Crown is a big plus point...

"Then on the software side we're working with System Architect to develop a dedicated version for this touring application; we call it Tour Manager.

"Overall I would say the amp technology, the DSP inside the amps – that's a key differentiating factor for us – and the BSS Omnidrive HD processing are key stand-out things in our approach to line arrays.

"It's always been about choice at JBL. We have powered loudspeakers or passive ones and we have a new input module for the powered which is exactly the same processing as in the Crown ITEC HD amps with the DPDA..."

Alcons Audio b.v

Evolutionary audio solutions

Alcons Audio, well known for its pro-ribbon technology, prides itself on HiFi quality at concert sound pressure levels.

Formed in 2002, Dutch loudspeaker manufacturer, Alcons Audio, is one of Europe's leading developers and manufacturers of professional sound systems for quality-conscious clients. Its proprietary high-power pro-ribbon technology produces HiFi sound quality at concert sound pressure levels.

All Alcons products are developed and manufactured in-house, using traditional craftsmanship combined with the latest technologies, materials and production processes.

The result is a high quality product that provides Alcons' customers with a long service life and low depreciation, giving the absolute maximum return on the investment.

Alcons also provides highly responsive support, essential for making sure any system delivers maximum performance.

The company's philosophy is 'What comes out must be exactly the same as what goes in', so Alcons products are designed to provide the most accurate sound reproduction possible, without adding any unwanted colouring or distortion to the original input. Alcons' cutting-edge products have redefined what is possible in acoustics, including the world's first long-throw, pro-ribbon-loaded SR system and modular DSP-controlled directivity line-array amongst others

V-Series

The V-Series is a group of versatile compact systems. Its incredible power output combines with true pro-ribbon quality sound reproduction in a multi-application housing.

The V-Series includes the VR8 with an RBN401 pro-ribbon driver and 8inch woofer, VR12, VR12i, VR12M, VR12/60, VR12/60i and VR12/60M all featuring an RBN601 pro-ribbon HF driver with 12inch woofer.

L-Series

The L-Series of vertical array loudspeakers are true line-source systems, to be used as line-array, either in stacked or flown configurations. Applications include both portable and permanent installations.

The L-Series comprises the LR7 micro pro-ribbon line-array, LR7B micro line-array bass unit, LR7/90 micro 2-way passive line-array, LR14 ultra-compact 2-way passive line array, LR14/90 ultra-compact 2-way passive line-array, LR14B bass system, LR16 compact 2-way bi-amped line-array and LR16B bass system.

Despite its compact size, the LR7 is a precision sound system with a superior size/weight:throw ratio, ideal for A/V projects where excellent sound from a compact system is key.

The LR7 can be produced in any colour and has been nominated for Best PA System in the Pro-Audio category of the 2010 Musikmesse International Press Awards.

B Series

This is a range of bass cabinets from high quality low frequency extension to high-pressure bass output that can be combined with any Alcons cabinet.

All Alcons systems come with a range of custom-made mounting and transportation options.

Q-Series

The Q-series is a group of modular line-source array columns designed to act as a flat-Isophasic line-array, for (limited) stacked or flown configurations. Applications include both portable and permanent installations.

The series includes the QR18 modular two-way column loudspeaker and QM18 low-mid extension; the QR36 modular two-way column loudspeaker and QM36 low-mid extension for both permanent and (limited) portable installations; and the QB363 modular front-loaded arrayable bass system, for permanent applications.

Amplification and control

Alcons provides a series of tailor-made controller-amplifiers, processors and IO connector panels.

The ALC-series of amplifiers offers a plug and play solution, but are easily converted into a standard stereo amplifier for powering non-Alcons speaker systems. The series comprises the ALC2 and ALC2-ST, ALC4 and ALC4-ST and ALC6 and ALC6-ST.

The DDP (Digital Drive Processor, DDP™) is the digital brain of the ALC controller-amplifiers. The device offers a range of speaker-specific processing and controlling options, enabling the ALC to optimally drive the Alcons speaker systems.

LR24

Alcons' new LR24 system is the culmination of three years work by the Alcons team, and brings Alcons pro-ribbon technology to the touring and larger installation markets.

Designed to deliver the same SPL as equivalent products in the mid-size line-array category, but with 15dB less distortion, the Alcons LR24 sets a new benchmark in terms of SPL, projection control and sound quality.

The system is a complete package, comprising line-array, line-array bass, ground-stacked subs, multi-channel amplification and processing. Each element has been developed from the ground-up, resulting in no less than three pending patents. Components include the LR24 mid-size three-way line-array, featuring an all-new pro-ribbon mid-high transducer platform; the LM24 low-frequency array-extension; BQ211 high-impact sub; BC543 self-contained cardioid sub and the ALC Sentinel - a powerful four channel DSP-based controller with full Class D amplifier stages onboard.

The LR24 gives Hi-Fi quality sound at concert SPLs - the Holy Grail of sound reinforcement - and marks the next stage of Alcons rapidly developing status in the pro-audio market.

Alcons Audio b.v.
De Corantijn 69
1689 AN, Zwaag
The Netherlands

t + 31 (0) 229 28 30 90
f + 31 (0) 229 28 30 99
e info@alconsaudio.com
w www.alconsaudio.com and www.theribbonnetwork.net

iDR-16 MixRack & iLive-R72

Allen & Heath

40 years of audio excellence and innovation

For 40 years, Allen & Heath has been at the forefront of professional sound. Renowned internationally for its British-designed, high quality products, the company has set many benchmarks in sound technology, developing industry standard products for the DJ and PA markets, and becoming an early pioneer of distributed digital mixing systems.

Focused solely on audio mixing technology, the company's staff have a passion which is expressed in innovating new products to meet the changing needs of audio professionals.

Allen & Heath started out providing mixing consoles for the bands Genesis, The Who, and Pink Floyd. Its current portfolio covers a broad spectrum of the industry, with recent users including Florence & the Machine, Alphabeat, AIR, President Obama's Nobel Peace Prize ceremony, ESPN Sports, John Digweed, Paul van Dyk, and Deadmau5.

Products comprise the iLive digital mixing family, iDR digital installation series, Xone DJ range, ZED USB compact mixers, GL multi-purpose series, MixWizard compact series, PA portable series, and the dedicated XB-14 broadcast and ZED-R16 recording mixers.

XB-14

Designed for a broad range of applications from small radio or internet broadcast studios, to hospital radio, university radio, community radio, and larger studios with multiple rooms, the XB-14 is equipped with a wealth of features specifically for broadcasters, including Telco inputs for telephone callers, mic fader open sensing for external connection and internal automatic muting of the speaker outputs, stereo channel start/cue outputs for CD deck transport control, multiple headphone outputs, and an additional stereo bus (Mix B).

The Latest Models From The iLive Digital Series

Allen & Heath's iLive digital mixing systems have built a strong reputation for audio quality and ease of use. Featuring an extremely flexible architecture with large-scale audio distribution and control, iLive brings an analogue feel to digital mixing.

There are several Control Surface and MixRack variants that can be mixed and matched in any combination, and show files are transferable between systems via a USB key. System components use the Ethernet protocol for control, so they can take advantage of solutions such as EtherSound, or Allen & Heath's proprietary point-to-point audio and control protocol, ACE link (Audio Control Ethernet), which allows CAT5 connectivity up to 120m.

All MixRacks feature the same 64x32 RackExtra DSP mix engine architecture, which provides processing for 64 channels, 32 mixes, and eight stereo FX processors. Dualcore DSP technology handles full FX, dynamics, EQ, delays, and mixing for all channels. The flagship iDR10 modular MixRack has ten slots for eight-channel analogue or digital interface cards, while the more compact iDR-16, iDR-32, and iDR-48 MixRacks have fixed I/O.

The Port B option slot allows further audio networking possibilities with ACE, EtherSound, MADI, ADAT, Aviom, Dante, RockNet, and Uman interfaces available. A built-in network switch and MIDI ports allow remote control using laptops, touch tablets, and MIDI devices. The racks are also compatible with the Allen & Heath PL Series remote controllers and iLive Editor software for offline set up and online real time operation of the system with or without a surface connected.

There are seven iLive Control Surfaces: the rackmountable iLive-R72, iLive-80, iLive-T80, iLive-112, iLive-T112, iLive-144, and the iLive-176. The faders are motorised and grouped in sections and layers, giving up to 176 control strips on the largest size surface. Other standard features include multi-colour LCD fader labels, direct access to comprehensive channel controls across the top of the surface, a colour TF touch-screen for automation and set-up details, and audio access at the surface. iLive is also fully compatible with iDR digital installation mixers for comprehensive, integrated venue audio systems.

ZED-R16

Zed Series

The ZED range of small format, USB-equipped mixers is designed to be flexible and affordable for the modern working musician to use on the road or in the studio. The series comprises the ZED-10, ZED-14, and ZED-24 stereo mixers; the ZED-10FX, ZED-12FX and ZED-22FX containing a comprehensive and beautifully-crafted set of in-house designed FX; the ZED 4-Bus range, designed for professional live sound applications which require more detailed EQ control, audio groups, longer throw faders and matrix outputs; and the ZED-R16 dedicated recording mixer, which combines Firewire with multi-mode MIDI/audio faders, MIDI controls, and 'home-studio' routing, enabling the user to build tracks in the studio or record a live gig, mix-down, and remix.

GL Series

Based on dual-function capability, which Allen & Heath pioneered in the early 1990s, the GL range (GL2400, GL2800, and GL3800) has been developed with a feature set dedicated to modern sound engineering, such as ambient matrix recording, fast IEM mixing, aux-fed sub, and engineer's wedge monitor. To provide the best sound quality, the GL models benefit from the latest audio circuit developments, a responsive 'musically-tailored' EQ, extended pre-amp gain range of 74dB with input on XLR or jack, and a new ultra-quiet mix head amp design for optimum dynamic range.

MixWizard Series

The multi-purpose and compact MixWizard series still retains its market leading status due to a strong blend of professional features, including an all-metal chassis, individual circuit boards, nutted rotary controls, smooth 100mm faders, LED metering, as well as six aux sends, four-band EQ, digital FX, and expansion capability. A new mic pre-amp design and advanced grounding scheme further enhance the range's sonic quality. Models comprise the WZ3 12:2 and WZ3 16:2, the WZ3 12M dedicated monitor mixer, WZ3 14:4:2 matrix mixer, and WZ3 20S stereo mixer.

ALLEN&HEATH

INFORMATION

Allen & Heath Ltd.

w www.allen-heath.com

t +44 (0) 1326 372 070

e sales@allen-heath.com

VENUE D-Show – *Avid's fully expandable, top-of-the-line live sound console.*

Avid
The VENUE Concept

Avid VENUE is a state-of-the-art live sound production environment that delivers studio-grade sound, unprecedented reliability, powerful performance, and complete ease of use.

From intuitive consoles and easy-to-use VENUE D-Show® software to Pro Tools® integration and the widest array of TDM processing at your fingertips, VENUE is shaping the future of live sound.

Amazing Sound

Designed by the same company that made Pro Tools the industry-leading digital audio workstation, VENUE systems deliver the same amazing sound quality to live sound environments. The system's remote-controlled, studio-grade mic preamps preserve audio fidelity and imaging for complete audio transparency, while built-in processing – including high-quality graphic EQ and dynamics – optimise clarity and smoothness for the most pristine sound production.

Rock-Solid Reliability

The live environment is tough, unpredictable, and unforgiving, and there's nothing more important than the assurance that your system will function optimally day after day, week to week. That's why all VENUE systems are built to withstand the rigors of the road and designed to circumvent hazards that can occur at any given show. All VENUE components offer redundant power supplys and robust tested software to provide peace of mind. You'll also find redundant snakes with FOH Rack and Stage Rack. And with the industry's first 'backup mode' feature, VENUE allows you to continue mixing the show without any audio loss should you ever need to reset the host computer.

VENUE SC48 – *A Truly Portable All-in-One System.*

Flexibility for Your Needs

VENUE offers the ultimate in flexibility to handle a wide range of live sound applications and needs. All systems offer a certain amount of expansion and customisability, and consist of a mixing console, digital sound processing, and I/O, and run on easy-to-use VENUE D-Show® software. Choose from the portable, more affordable VENUE SC48 or VENUE Mix Rack System, the compact but expandable VENUE Profile™ System, or the highly expandable VENUE D-Show® System, then take your pick of various options to expand the I/O, add more DSP power, provide artist-driven personal monitoring, integrate Pro Tools recording and playback, and more.

Fully Integrated Plug-ins

With VENUE, studio sound moves to the stage. VENUE is the only system to directly support the same high-resolution audio plug-in format used in countless Pro Tools-equipped recording studios – no separate computer or external connections required. Recording artists can experience the same sound that inspired them in the studio on stage, and engineers can easily achieve the same mixes by transferring the plug-in settings used in the recording studio to VENUE via a USB key. All VENUE systems come with a collection of professional plug-ins to get started, including various compressors, reverbs, delays, and EQs, and many more plug-ins are available from Avid and some of the most respected names in pro audio, including McDSP, Eventide, Drawmer, Antares, Sonnox, Crane Song, URS, Waves, TC Electronic, and Serato.

Direct Connection To Pro Tools

VENUE offers the most streamlined, reliable, and economical approach to integrating Pro Tools multi-track recording and playback into a live production environment. With an HDx or FWx Option Card installed, simply connect a computer running Pro Tools HD® or Pro Tools LE® software to the VENUE system through the card. Then record every single input from the stage – up to 128 tracks with Pro ToolsIHD or up to 24 tracks with Pro Tools LE – without the need for additional interfaces or splits.

Virtual Soundcheck

With Pro Tools integration, VENUE offers an innovative workflow for sound checking called Virtual Soundcheck, enabling you to use pre-recorded tracks from a previous show or rehearsal in place of live inputs. This allows you to fine-tune the mix to the current venue without requiring the presence of the performers. And artists in attendance have the opportunity to hear what the mix sounds like in the room instead of on stage, and can work with the engineer to achieve an optimal mix.

Complete Compatibility

Because all Avid VENUE systems operate on the same D-Show software platform, you can easily swap out individual VENUE components to re-scale a system for a specific need. Got a VENUE Profile System but need more input faders to handle large-scale productions? Switch out the Profile for a D-Show console and attach up to three D-Show Sidecars for dual engineer operation. Or maybe you're looking to scale down a VENUE Profile System to do a club tour; switch out the FOH Rack and Stage Rack for a Mix Rack. Not only is it easy to change VENUE hardware configurations, you won't need to rebuild any show files when you move from system to system, as D-Show software ensures show file compatibility across the product line, no matter the hardware configuration.

Adoption

Across the world's biggest concert stages and live broadcast events to houses of worship and theatres large and small, more FOH and monitor mixers, sound companies, worship leaders, broadcast engineers, and contractors are choosing VENUE for its unrivaled sound quality, reliability, performance, and simplicity. From Bruce Springsteen to Ozzy Osbourne, from Broadway to the Grammy® Awards, from houses of worship to the Olympics and beyond, audiences everywhere are experiencing the amazing sound quality of VENUE.

avid.com

INFORMATION

Avid – Headquarters
1925 Andover St. - B2
Tewksbury, MA 01876 USA
t +1 978 640 6789
f +1 978 640 3366

Avid – European Headquarters
Pinewood Studios, Pinewood Road
Iver Heath, Bucks, SL0 0NH UK
t +44 (0) 1753 655999
f +44 (0) 1753 654999

Find your local reseller at
www.avid.com/venuelocator

DiGiCo UK Limited
Truly user-friendly digital mixing systems

From the sophisticated SD7 to the cost-effective SD9, DiGiCo has a digital live sound console to suit everybody.

In 2002, DiGiCo began supplying the live sound market with truly user-friendly digital consoles. Since then, the DiGiCo team has continually improved and added to its product range, with solutions for every event from the most complex, with the SD7, to the most cost conscious, with the new SD9.

Complete mixing solutions

DiGiCo's live portfolio includes the SD7 and its theatre specific derivative, the SD7T, the D5 Live, D5T/12, CS-D5, D1 Live, SD8 and SD8-24 and the new SD9 for permanent installations such as theatre and worship facilities, as well as live events from corporate functions to rock 'n' roll concerts.

All DiGiCo consoles have a common design from engine to interface, and they all run MADI and/or OptoCore. Once an engineer knows how to work one console in the range, any other will be instantly familiar.

Stealth Digital Processing™

The original surface design of DiGiCo consoles was deliberately simple and easy to use. This great foundation has changed little – although there have been many changes and refinements below the surface, including the advent of Stealth Digital Processing™ via a Super FPGA engine in the SD range – with the emphasis always on allowing engineers to get their jobs done quickly and easily.

With the D-Series, efficient DSP design and coding means DiGiCo products still achieve more channels/busses per processor than many other manufacturers. Floating-point processors give vastly increased headroom and a system that's almost impossible to clip: processing up to 40 bits means even low-frequency signals maintain integrity, and Optocore provides stable transfer of up to 512 channels in a redundant loop, over distances in excess of 1000 metres.

Gain Tracking™

DiGiCo is the only company that employs Gain Tracking™ to allow up to four consoles to share inputs/house racks without affecting each other's gain structures, having to have splitters, or change from digital to analogue. This is ideal for the live and broadcast environment where there may be front of house, monitor and mobile broadcast/record consoles. DiGiCo consoles also have a different approach for accessing channels, providing a visual indication of what is happening on all faders. With the exception of the I/O racks, DiGiCo consoles are a one-box solution, giving the minimum number of connections and allowing engineers to turn up, turn on, and mix.

Audio interfaces

The I/O is housed in a variety of external racks, from the standard size 9u DiGiRack, to the 8u MaDiRack used predominantly with the SD8, or the more compact 4u MiNiRack, or the new D-Rack. Full redundancy is provided, both for power supply and the MADI or optical connection to the racks themselves. DiGiCo has always championed the use of remote stage racks as they minimise signal degradation from sources such as microphones; and, of course, digital multis eliminate the need for bulky analogue multicore snakes. As standard, SD Series consoles also provide integrated I/O within the surface, eliminating the need for an external local I/O rack for front of house applications.

The common interface of the I/O - MADI or Optocore - provides a seamless interface between racks and gives up to 224 inputs and 224 outputs with the D Series consoles and up to 696 inputs and 696 outputs with the SD7. I/O cards include analogue, AES/EBU, Aviom, Ether Sound and D-TuBe. Recording and playing back shows/performances is simple by teaming up with various third-party MADI interfaces and well-known DAWs. Offline software allows preparation on an off-site computer, giving huge savings on set up times.

DiGiCo has always made its consoles future upgradeable, as shown with V4 software for the D Series, Mach 2 and the 'T' theatre software for the SD7 and Overdrive for the SD8/SD8-24.

DiGiCo/Waves SoundGrid

Thanks to Super FPGA technology, the SD Series is Waves-ready and the soon to be released DiGiCo/Waves SoundGrid will allow DiGiCo users to exploit the versatility of Waves plug-ins and provide instant access to up to 16 fully integrated low latency Waves stereo effects racks that can have up to 32 plug-ins per rack on the SD7 and up to eight on the SD8 and SD9, perfect for either front of house or monitors.

SD9

DiGiCo's SD9 is a complete, integrated system, which includes the mixing surface, a D-Rack digital stage interface and CAT5E digital multicore.
It features 32 microphone inputs, eight line outputs and eight modular outputs that can be selected as either analogue or AES, providing a capacity of 32 ins and 16 outs, with the additional ability to simultaneously record 56 channels direct to your favourite multitrack software or DAW.
The work surface features a giant full colour digital TFT LCD touch-sensitive screen, 24 full-length motorised faders with touch-sensitive fader caps, high resolution bar graph meters, quick access encoders and buttons plus user defined RGB backlit LCD scribble strips to ensure that all functions of the system are available to users in a split second, with no hunting through multiple menus.
Featuring the third generation Stealth Digital Processing™ software, its Super FPGA technology incorporates floating point processing for superior headroom, dynamic range and audio quality.
The system is expandable, allowing a second D-Rack to be connected via an additional CAT5E, doubling the number of inputs and outputs.
All this at a price makes the SD9 the perfect solution for touring bands, schools, conference centres, smaller theatres, houses of worship and a host of other applications where exceptional performance and flexibility need to be realised on a tight budget.

Unit 10
Silverglade Business Park
Leatherhead Road
Chessington, Surrey KT9 2QL

t +44 (0) 1372 845600
f +44 (0) 1372 845656
e info@digiconsoles.com
e www.digico.biz

JoeCo
BLACKBOX RECORDER

A ‘plug-in and forget’ solution to recording

Capturing live performance is high on the agenda for almost every band or artist these days. Whether it’s archiving a six-month world tour, or recording your band at a local pub or club, one thing’s for sure, the less gear involved, the better – especially if it can mean leaving your precious computer at home!

This concept inspired former SADiE Managing Director Joe Bull in his development of the JoeCo BLACKBOX RECORDER.
An experienced sound engineer, Joe appreciated the problems inherent with using standard computer-based recording systems in live venues. He wanted to create a ‘plug in and forget’ solution for capturing high-quality, multi-track live audio that didn’t involve taking a computer, half a studio, and an assistant to every venue.

The 1U, rack-mounted BLACKBOX RECORDER attaches to any live console. It can be sited at front-of-house (or at the stage box) in any type of performance venue and is record ready just 10 seconds after power up. Its simple user interface lets the engineer focus on the live mix, with a number of fail safe features ensuring secure audio capture and uninterrupted signal flow at all times.

Up to 24 channels of 24-bit/96kHz audio can be recorded in Broadcast WAV format onto a regular FAT32 formatted USB2 hard drive, or USB Flash drive. A 500GB drive stores over 20 hours of 24-track material (over 40 hours at 48kHz). The latest software also offers a formatting facility that makes the unit completely self-contained.

After the performance, the hard drive can be plugged directly into any Mac- or PC-based Digital Audio Workstation for editing and mixing the files. No file conversion or copying is necessary, so it’s a practical, time-saving way to produce live recordings, demos, or simply to check out the performance before the tour bus has even left the venue!

Available in several versions, the unbalanced BLACKBOX RECORDER (BBR-1) attaches to the console’s insert points. Its outputs are fed back to the console’s insert returns, providing a Virtual Sound Check facility, designed to save both engineer time and band stamina. This feature is also available on other BBR versions.

The balanced version (BBR1-B) connects to a front-of-house console with balanced audio insert points or balanced group outputs, offering 24 channels of balanced inputs and outputs. Connection between the console and the BBR1-B conforms to the standard eight-way balanced analogue cables used by Tascam, Digidesign, Radar, and others.

Upcoming digital versions include the AES/EBU (BBR-1D) with 24 (12 stereo) channels of AES/EBU input and output at sample rates of up to 96kHz (with no reduction in track count at 96kHz). Connection to the console is via three 25-way D-type connectors, selectable between Yamaha and Tascam pin outs. The unit is fully AES3 compliant.
The ADAT version (BBR-1A) provides up to 24 channels of ADAT lightpipe input and output. Both variants also offer Wordclock input.

For live recordings requiring more than 24 channels, up to four BLACKBOX RECORDER units can be linked together.

Since its release in 2009, the BLACKBOX RECORDER has received a PLASA Award for Innovation and a PAR Excellence Award.

INFORMATION

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Sound Technology Ltd.
w www.soundtech.co.uk
t +44 (0) 1462 480000

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FullScaleAV
w www.fullscaleav.com
t +1 615-833-1824

w www.CapturingPerformance.com

Midas – The Gold Standard

An audio console is, first and foremost, about audio. Midas has always set the gold standard for live sound, and continues to ensure that the adoption of new technologies does not compromise this in any way.

Midas Digital Systems Overview

The Midas XL8 and PRO6 digital mixing systems consist of a control centre and a number of 19-inch rack modules, which are inter-connected by a networked audio and data system. The network carries both proprietary control data and open architecture AES50 digital audio via readily available standard CAT-5e/CAT-6 and fibre optic cabling and connectors. This 'system' approach means Midas provides not only a mixing console, but also a complete analogue and digital audio control and distribution system. Control centres are typically robust Midas steel frames, featuring dual-redundant master control computers and daylight-viewable display screens. Remote rack units consist of DL431 active input splitters, DL451 and DL351 user-configurable modular I/O boxes, and N+1 redundant DL471 (XL8) or DL371 (PRO6) remote modular DSP engines. Both systems have offline editing software that is available free of charge from the Midas website. www.midasconsoles.com

Midas Modular Digital Mixing Systems

When considering the many confusingly diverse options digital mixers embody, it is worth reviewing the advantages of modular over non-modular analogue consoles, as the same rules apply. The modular approach provides greater flexibility of type, and location, of I/O. For example, a Midas XL8 system can have many hundreds of inputs and outputs in 18 different locations.

XL8 and PRO6 use AES50 (24 bi-directional audio channels plus control data per CAT-5 connection) which allows for greater flexibility of hardware. It is easy to distribute the various devices which comprise a networked system to different areas of the stage or, given the 100 metre capability of AES50, around the building.

Modular design also means that the keystone element of the DSP engine can be located in a more secure environment, leaving only the control surface exposed to the environmental vagaries of the performance area. By removing the audio processing from the console itself, the user interface can now be designed for optimum efficiency and minimal footprint, and Midas' concept of input navigation by user-configurable groups instead of layers, means operating the console with confidence is easily mastered within a few minutes, even by an inexperienced engineer.

The processing engines for both XL8 and PRO6 are both of modular design, which provides N+1 redundancy of hardware in the form of a redundant module. This means peace of mind during a show and better commercial viability, as the cost of the system is not burdened with the cost of an entire backup engine. Modular systems also have the advantage of being easily expandable as the venues' requirements change, instead of having to re-invest in a new system.

Everyone knows Midas designs the best live sound mic preamps available, but there's more to the sound of a digital mixer than mic pre's. Midas does not rely on gadgety processing options for audio performance. Computing power is used for complex interpolation algorithms and other proprietary processing methods to ensure that legendary Midas sound is faithfully reproduced, with improved performance.

Midas digital consoles are the only live sound consoles in the world which have automatic latency management, including delay compensation for external analogue processing. This means that the mixers' output is always phase-coherent, regardless of any convoluted internal routing; another reason why no other console CAN sound like a Midas.

Midas Product Line Summary

The Midas XL8 is the perfect solution for high-capacity and high-profile applications, both touring and fixed install. With a network capacity of up to 432 inputs and 432 outputs in 18 different locations, Up to 144 simultaneous channels and 51 mix busses, with built-in tolerance to any failure scenario, and the legendary Midas sound with all the advantages of digital technology, there really are no alternatives.

The Midas PRO6 is the natural successor to the industry-standard Heritage 3000. However the PRO6 has more inputs, more busses, all-onboard FX, dynamics, and GEQ processing, plus a dual 100 metre snake; all for the same price as a Heritage 3000-48! It provides up to 80 simultaneous input channels, 35 mix busses, and is expandable up to 288 inputs and 288 outputs at the network level.

In addition to the XL8 and PRO6, Midas is renowned for designing and manufacturing some of the world's finest analogue audio mixing consoles. These include the touring industry's favourite console, the Heritage 3000, which is equally at home at front of house or on monitors, and the dedicated front of house console the Heritage 2000. The semi-modular Legend 3000 is a multi-application console, with each input channel providing independent FOH and monitor controls with dedicated EQ and faders, a first in the live sound industry.

Siena brings all of Midas' knowledge and experience in building dual-purpose consoles to a compact package. Siena has been designed to both complement and expand the groundbreaking Verona concept, which provided Midas quality in a desk that revolutionised the eight-buss market. Midas' first truly compact console, the Venice, is a common sight in applications from conference venues to concert touring.

Midas' rack mounted XL88, a line level 8x8 matrix mixer greatly expands the capabilities of any mixing console to give eight fully independent sound balances from eight pre-mixed group outputs from the main console. Finally the 1U XL42 dual channel creative equaliser incorporates the legendary XL4 four-band parametric equalisation with XL4 mic/line pre-amplifiers and 48V phantom supply. Ideal for any applications requiring a high quality front end.

INFORMATION

Midas Consoles, Klark Industrial Park, Walter Nash Road, Kidderminster, Worcestershire, DY11 7HJ, UK

w www.midasconsoles.com

t +44 (0) 1562 741515

f +44 (0) 1562 745371

e james.godbehear@midasklarkteknik.com

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StudioLive 16.4.2

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Riedel Communications
The Communications People

Riedel has proven expertise in fast and reliable communications solutions. RockNet audio networking *can* rock your world...

Riedel Communications was founded in 1987. It designs, manufactures, and distributes sophisticated intercom, fibre, audio and professional radio technology for customers in the world-wide broadcast, defense, event, and theatre markets. The company is known for pioneering digital audio matrix systems, and is the market leader in fibre-network matrix systems. Riedel's product portfolio includes digital intercom and fibre optics solutions, digital audio networks, and professional mobile radio technology. Riedel is headquartered in Wuppertal, Germany and employs over 200 people in eight locations throughout Europe, Asia and North America.

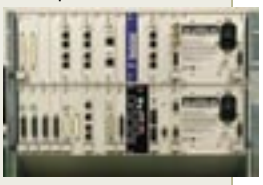
Riedel's clients and projects have included all Olympic Games since the Lillehammer Winter Games in 1994. Furthermore, the company supplies all F1 Grand Prix circuits and various F1 racing teams with radio and intercom solutions. Events, broadcast networks, industry clients, and theatres rely on Riedel technology.

The Red Bull Air Race Championship, where Riedel provides all communications and signal distribution solutions, integrating both HD video and audio signals as well as wireless and wired digital intercom systems, received with an Emmy Award in 2009 in the *Outstanding Technical Team - Remote* category.

Yamaha, Soundcraft, DiGiCo

Yamaha console users can access RockNet with the RN.341.MY Yamaha Interface Card, which fits into a Yamaha MY-card expansion slot and gives access to 16 input and 16 output channels.

In April 2010, Riedel unveiled the new RockNet RN.343.VI expansion card for Soundcraft Studer digital mixing consoles. The RN.343.VI card fits into a console's SCore Live or D21m card expansion slot and gives access to 64 input and 64 output channels. A wordclock input is featured via the backplane connector, while a wordclock output is available at the front panel. A rotary switch is provided for device identification and selection of up to 15 programmable routing tables. The RN.343.VI enables the respective Soundcraft Studer product to become a part of RockNet and enables remote control of any RockNet microphone pre-amplifier.



Also in April 2010, Riedel announced a 'close technology partnership with DiGiCo in order to develop solutions that will increase compatibility between the two manufacturers' products.

RockNet

Riedel's flagship audio network platform is RockNet, designed specifically for live sound applications. It is a cost-effective, integrated networking product, which was invented, designed, and optimised for audio contribution and distribution. RockNet provides ultra low latency and very high audio quality. It is easy to install as it's an integrated system that does not require any third party products.

Only two types of cable are necessary to hook up a network: microphone cable with XLR (male/female), and CAT5 with RJ45 (Ethercon). RockNet devices do not require breakout panels or any special cables and connectors, and up to 99 devices can easily be added to the network, which can be set up within minutes.

All devices can be configured intuitively by front panel push buttons.

No particular IT or computer network know-how is needed to set up and operate RockNet. The control section of all 19-inch RockNet products provides the controls to set up and configure the unit without a computer. It incorporates three two-digit displays and six push buttons that are used for intuitive operation of a three level menu.

RockNet offers superior resilience, incorporating a streamline redundancy concept on device and network level. The network interface of each device features two interconnections for fail-safe transmission of audio signals on the CAT5 infrastructure. Based on a redundant ring topology, RockNet forms a self-healing network with no loss of audio in case of a connection fault between two devices. Lateral ultra-low latency asynchronous transmission enables RockNet to support various redundant network topologies and to provide real-time isochronous data transport along with packetised data such as TCP/IP. The data rate is 400 MBits/s on a CAT5 cable and the number of nodes is limited to 99.

For the RockNet 300 series there are currently seven audio interfaces available, including the new RN.335.DI digital input interface, which provides eight digital inputs via AES; and the RN.334.MD MADI interface which offers electrical and optical inputs and outputs. Also available are the RN.301.MI microphone/line input interface; the RN.302.LO line output interface; the RN.331.DD digital I/O interface; the RN.332.DO digital output interface and the RN.333.DI digital input interface.

RockNet 300 network accessories include the RN.362.IR In-Line Repeater, which extends the length of the CAT5 based infrastructure between the two RockNet 300 devices to a maximum of 450m; and the 350 series fibre interfaces, which are designed to be used for applications where extended distance between network devices is required. They are equipped with universal transceivers for single or multi-mode fibres to meet the respective infrastructure requirements.

RockNet 100

RockNet 100 is a flexible, digital snake solution, and a cost-effective way to enter the world of RockNet digital audio networks. Based on the RockNet 300 technology, RockNet 100 provides 80 audio channels with the same digital audio quality and ease of use.

RIEDEL
The Communications People

INFORMATION

Riedel Communications GmbH & Co.KG
Uellendahler Str.353, 42109 Wuppertal, Germany
t +49 (0) 202 292-90
f +49 (0) 202 292-99 99
w www.riedel.net
e sales-international@riedel.net

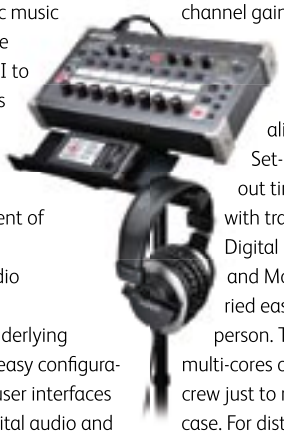
RSS by Roland

Innovation and flexibility in digital audio

RSS by Roland introduced its award winning REAC based Digital Snake in 2006. Since then, REAC (Roland Ethernet Audio Communication) has provided the backbone for the flexible, innovative RSS range of Digital Snakes, V-Mixers, and M-48 Personal Monitoring products.

Audio Innovation An Evolving Story

For more than 30 years Roland has been at the forefront of innovative digital and electronic music technology. From the earliest days of MIDI to the signature sounds behind hundreds of 'A list' acts, Roland has sought to 'Inspire the enjoyment of creativity'.



RSS professional audio products are no exception to that underlying principle – bringing easy configuration and enjoyable user interfaces to multi-channel digital audio and mixing.

Capturing, shaping, and reproducing high quality audio with equipment that is enjoyable to use is an integral part of Roland's enviable history. This heritage is of great benefit to RSS and the rapidly growing community of worldwide audio professionals using and specifying their products daily.

Snakes Go Digital

In 2006 RSS launched the S4000 series of Digital Snakes utilising REAC (Roland Ethernet Audio Communication), to transfer multi-channel 24-bit audio over Cat5 Ethernet cable. Carrying 40 channels at 96khz 24-bit resolution, along with MIDI & RS232 control data, REAC only showed a hint of its full capability. Using the easy splits on the S4000SP Dual REAC Hub at FOH, makes monitor and recording feeds instantly available. RSS Snakes offer some unique benefits, not the least the ability to upgrade the firmware and incorporate REAC developments and enhancements easily. One of the underlying principles of REAC is that it does not require any specialist networking knowledge in order to configure a system.

Early adopters of RSS Digital Snakes immediately noticed improved clarity, frequency response, and signal quality over existing solutions. Most noticeable was the absence of interference associated with standard multi-cores. The ability to remotely set individual channel gain, pad, and Phantom from FOH or Stage and store complete 'scenes' added a unique level of functionality to the REAC system. Set-up, installation, and get-out times were reduced along with transport costs. A 100m Digital Snake system with FOH and Monitor splits can be carried easily and deployed by one person. Traditional copper based multi-cores often require two or more crew just to manhandle the hefty flight case. For distances up to 100m a single Cat5 cable can carry all of the audio. Using multiple RSS S4000SP or suitable Gigabit hubs up to 500m is achievable, but using Fibre via the RSS S-OPT distances of 2.4km are possible with less than 2.4ms latency. No wonder then that RSS Digital Snakes were immediately put to use by Outside Broadcasters including the BBC, plus theatres and houses of worship.

One theatre installer commented that, "Using RSS Digital Snakes saved six days of soldering on site, and the reduction in cost that represented per multi-core and tie-line split won the contract."

Snakes Multiply Record & Post- Produce

Shortly after the launch of the S4000 series, RSS introduced the next generation S1608 and S0816 fixed format (16-in, 8-return) Digital Snake stage and FOH units. All the same benefits of the larger system were incorporated into these rack-mountable, highly portable units, including the ability to upgrade firmware. Cross compatibility with other REAC products being standard. One additional feature being a two-channel Optical output used to synchronise the Digital Snakes with Cakewalk by Roland SONAR Producer edition software. Cakewalk by Roland SONAR is a standalone Audio & MIDI Recording and Post-production package which with the addition of a REAC ASIO driver becomes capable of capturing up to 40 channels of 96kHz 24-bit audio direct from a REAC stream via Cat5 cable.

V-Mixers, Monitors, Merge & Mobility

Following the rapid adoption of Digital Snakes and recording technology by the Professional Audio world RSS made the next logical step in launching the V-Mixing Solution. The M-400 V-Mixer, clearly a unique and innovative concept, was quickly followed by the M-380 with all the features of an M-400 in a 19-inch rack-mount format ideal for installations.

The 'basic' V-Mixer set up connects with two Digital Snake stage boxes giving 32 incoming channels, and 16 returns via Cat5 cable. It also has eight local I/O, plus two channel stereo in and two channel Optical Out. Featuring LCR, 8xMatrix, 8xDCAs, and 16xAux, all encapsulated in a compact footprint saving space, transport and storage costs. Of course you can go way beyond 'basic' without things becoming mind-bendingly complex.

Recent additions to the RSS range are the M-48 Personal mixers, allowing musicians to control 16 channels or groups in their own unique monitor mix. Up to 8 x M-48s are powered over Cat5 using the S4000D hub, and hubs can be cascaded for larger systems. Stage clutter and noise are greatly reduced and an ambient mic in each unit prevents the isolation often experienced when using In-ear monitors.

The latest additions to the REAC line include the unique S0808 portable Digital Snake, and the S4000M REAC Merge unit. With eight I/O, power over Cat5 via REAC, and battery options, the S0808 is the world's first multi-powered, go-anywhere snake. The S4000M allows up to four Digital Snake heads to merge into a single REAC stream giving unprecedented flexibility to the system.

Going beyond 'basic' REAC technology allows simple splits to Digital Snakes and/or cascaded V-Mixers providing unique mixes for FOH, monitors, broadcast, and recording. Every routing, patch, effect, or EQ decision can be stored in a unique scene, and up to 300 scenes can be stored in a project for complete or partial recall. Remote control via USB allows engineers to set up a system from within the listening areas or on their laptop before the show.

No wonder so many audio professionals are making RSS their first choice.

RSS by Roland

INFORMATION

RSS by Roland
Roland Systems Group
Atlantic Close
Swansea
SA7 9FJ
t +44 (0) 1792 702701
f +44 (0) 1792 600520
e info@rolandsg.co.uk

Sennheiser – Keeps Artists Rockin' On Radio

Quality, reliability, and flexibility are the core values of Sennheiser wireless stage products – giving artists the freedom they need.

Sennheiser microphones and headphones have consistently delivered the very best audio performance for decades. Nowadays, the name is also a byword for excellence in wireless stage products, providing unparalleled audio quality and reliability.

The Wireless Experts

As one of the world's leading specialists in wireless technology for live sound, Sennheiser equipment is used by hundreds of artists worldwide. From the biggest stadium to the smallest club, Sennheiser gives complete freedom on stage, while maintaining the ultimate in signal quality, whatever the budget.

All models are designed to easily withstand the rigours of the toughest touring environment, while delivering high quality, interference-free sound.

Sennheiser also works tirelessly in customer support. Availability of radio frequencies for wireless microphones and in-ear monitoring systems will see radical changes over the next few years and the company is working hard to keep users informed about developments – both in the wider picture and, more specifically, what users of the company's systems can do to ensure minimum disruption.

2000 Series

Sennheiser's latest range of wireless transmitters and receivers, the 2000 series, has recently been used by such heavyweights as Metallica, Pink, and the Jonas Brothers; and at prestigious events such as the Grammy awards.

Offering a comprehensive range of components for vocals, instruments, in-ear monitoring and camera systems, the 2000 series easily satisfies global production standards and is extremely flexible, providing an investment you can rely on for years, even with daily use.

The heart of the 2000 series is its true diversity receiver, available as a 19-inch unit with single channel (EM 2000) or twin channel (EM 2050) design. With five UHF frequency ranges and a switching bandwidth of up to 75 MHz, it offers great flexibility, aided by professional frequency management taking place directly through Wireless System Manager (WSM) software on a PC or Mac, via an Ethernet connection.

Automatic synchronisation via an infrared interface saves precious time during set-up, while the integrated antenna loop-through enables systems that have up to 16 channels to be set up without an external splitter. An integrated guitar tuner and guitar cable emulator also makes the EM 2000 the perfect wireless system for guitarists when used in combination with the SK 2000 bodypack transmitter. The audio frequency response of the transmitter extends down as far as 25 Hz (line) to ensure a full sound even from the bass guitar, while the instrument cable is fitted with Neutrik's silentPLUG®.

evolution wireless G3

The latest generation of Sennheiser's evolution wireless systems, G3, has found a warm welcome at a wide range of events ranging from the BRIT Awards, the Glastonbury, V, Leeds / Reading Festivals, and many others. G3 systems are being used by the highest profile artists, often with custom finished handheld microphones.

The G3 range comprises three series. The 100 Series and 500 Series are available for both vocals and instruments, with the 300 Series available for vocals, speech and in-ear monitors. All feature rugged metal housings, true diversity receivers, 42 MHz switching bandwidth (meaning 1680 switchable frequencies), an AF frequency response of 25/80 - 18,000Hz, enhanced range, infrared synchronisation of transmitters, large dot matrix displays, and an HDX compander for the highest possible quality sound.

The 100 Series is a cost-effective solution for smaller club and theatre shows, while the 300 and 500 Series offer additional features for more complex requirements.

Supporting users

The manufacture, supply and operation of wireless technology is a highly specialised business. These systems form the direct link between the artist, their voice or instrument and the equipment used to amplify them, as well as enabling the artist to hear themselves, consistently and at safe volume levels, on stage. They are arguably the most important links in the signal chain of any performance.

Sennheiser develops very close relationships with both its artists and their technical crews, with company representatives frequently being present at events where a lot of Sennheiser equipment is in use.

Meanwhile, away from the sharp end of equipment use, work is constantly going on to ensure that access to spectrum is maintained for the industry, by means of regular contact with relevant spectrum management authorities, ensuring that the right equipment is developed to exploit that access.

A good example would be in the United Kingdom where Ofcom, the UK's spectrum regulator, recently

confirmed that channel 38 would replace channel 69 as the one nationally available 8 MHz channel for radio microphone use.

Work immediately started to develop a new version of evolution wireless G3 that will fully exploit all of channel 38 and as much of the interleaved spectrum above channel 38 as the system's 42 MHz tuning range will allow.

Availability is scheduled for Q4 of 2010 and current versions of G3 that tune to channel 69 will be convertible to the new version. However, some users may decide not to opt for conversion as systems that are capable of tuning to channel 69 can also tune to the licence-exempt frequencies 863-865 MHz.

With G3, five wireless microphones can be operated simultaneously in this 2 MHz slice of spectrum, which may be sufficient for many users. As for the 2000 Series, range GW tunes across the whole of channel 38 and is available now.

SENNHEISER

Sennheiser electronic GmbH & Co. KG
Am Labor 1
30900 Wedemark
Germany
t +49 (5130) 600 - 0
f +49 (5130) 600 - 300
w www.sennheiser.com

Sennheiser U.K Ltd
3 Century Point
Halifax Road
High Wycombe
Bucks HP12 3SL
t +44 (0) 1494 551 551
f +44 (0) 1494 551 550
t www.sennheiser.co.uk

Sonnox Plug-ins
Your Studio Sound Live

When one thinks about audio plug-ins, they are often tied to a DAW locked away in the studio. But with the maturing of live digital consoles, particularly Digidesign's Venue, plug-ins have, to some extent, replaced countless racks of gear in theaters and arenas around the world. We talk to a few prominent live sound engineers who rely on Sonnox Oxford plug-ins to bring that carefully crafted studio sound to the stage.

"In addition to working with Peter Gabriel as Producer/Engineer and Executive at his UK-based Real World Studios for over 15 years, I mix his monitors on the road," notes industry veteran Dickie Chappell. After such considerable time together, he knows exactly what Peter wants. "Peter's voice needs a lot of EQ for his in-ear monitors, so the Oxford really shines there. The filters really help shape my sound. In the studio we don't need much EQ for Peter but when we are on the road, it's very different – it's critical that he can hear himself very clearly. Our Front of House Mixer, Ben Findlay is using a Venue and I'm using a Profile for monitors" Chappell explains. "We've both got them loaded up with Oxford plug-ins – EQ, Dynamics, Reverb, and Trans Mod. Basically, it was our choice as to what desk to use live, and it came down to the fact that the Digi desks enable us to use all the Oxfords we have at Real World. It's worked out really well. We have everything onstage that we had in the studio, and Peter's live performances sound exactly the way they did when we first mixed them."

Tone Shaping EQ

Whether working in his home studio or out touring the world with artists such as Avril Lavigne, Dido, or The Tragically Hip, Front of House Mixer Mark LeCorre always turns to the Oxford EQ to get the job done. "The Oxford EQ has been invaluable," he says. "I put it on the stereo output section of the desk, because it's a great sounding EQ. It's also on most channels across the mix, as my main tone-shaping EQ – if there's a kick or a tom or an acoustic guitar that has some frequencies we want to notch out." LeCorre also commented on how easy it was to take the software from one show to the next. "We usually have the same board, so I throw the plug-ins on my USB key in and just load up the show. It doesn't get any easier than that!"

Smooth Reverb

Andrew Thornton, who has mixed front of house for acts like The Sugababes and Jamiroquai, took his trusty Oxford plug-ins out on the last Girls Aloud Tour, to get the girls sounding as good as they look. " I'd actually been using a lot of different reverbs," says Thornton, "but when I heard the Oxford Reverb I was really impressed – it was not a boring, digital sounding reverb – it has a real smoothness to it. I ended up using it as one of my longer vocal reverbs, as it doesn't have any kind of brittle or harsh overtones and I thought it sounded really great." He also used the Transient Modulator on drums. "With these kind of pop bands you're given a load of percussion and other drums coming from an electronic source or playback system, so the live drummer has to 'sit' within all of that. Everyone likes to have that kind of live drum sound, but it has to fit within that very tight electronic sounding world. So the live show is much more 'band' sounding with more edge, and the TransMod helps me get the kick, and snare, to sound as good as these really highly processed studio sounds."

If you're looking for the guy mixing audio for such events as the Glastonbury Festival, and HM Queen's Golden Wedding Anniversary, you'll find 30-year industry veteran Simon Honywill, who's also using Sonnox plug-ins. "I use the Oxford EQ for my main system equalisation," he reports. "Graphic EQ is never sufficient for realistic system equalisation, and for me, only the best parametric will do, so the Sonnox Oxford fits the bill perfectly. I've also been doing Chris Rea's sound for the past 12 years, and have come to rely on the Oxford EQ and Dynamics to get the excellent results for which we have been recognised," he continued. "I use Oxford EQ and compressors on his vocals and gates on drums. In fact, the entire PA system EQ is done with Oxfords. Several years ago we recorded a live album, The Road To Hell and Back, and the ability to utilise the same stuff was invaluable."

Radio Ready Mixes

As well as touring rigs, Oxford plug-ins are also being used in installed systems at music clubs. As former Technical Director/Head Sound Engineer of Le Poisson Rouge in New York's Greenwich Village, Josh Loar used them in different live situations every night. "I'd use the Dynamics all the time because it's a great compressor," he said. "I especially love it on lead vocals, but also use it to get kicks and snares popping." In addition to mixing, Loar would record the shows using a full Pro Tools HD rig. "Often someone wanted a bounce of the show right after it was done. We'd set up a bus and sum everything within HD while simultaneously rolling on a two-track bus. We'd put the Oxford Limiter on so that when we bounced it, there was already a nice sheen on the premaster. It was certainly the nicest rough board mix you'd get in town. The Oxford Limiter has a lot to do with that. It made the tracks that came out of there sound radio ready."

With testimonials on this level, it's clear that Oxford Plugins from Sonnox are quickly becoming as indispensible in live sound applications as they are in the studio.

Sonnox Oxford Plugins

Sonnox Ltd.
w www.sonnoxplugins.com
e info@sonnoxplugins.com

Waves
Taking The Lead

Waves' cutting edge software and processors can be used in every aspect of audio production, and heard in major productions around the world.

Waves is the world's leading developer of signal processing solutions for the professional, broadcast, and live audio markets.

Heard on hit records, major motion pictures, and popular video games worldwide, Waves' over 100 cutting-edge software and hardware processors are used in every aspect of audio production, from tracking to mixing to mastering, broadcast, post-production live, and more.

Waves products are endorsed by many of the biggest names in show business, including twelve-time Grammy® award-winner Kanye West, Comedy Central's South Park, and 50+ million-selling rockers Linkin Park, to name but a few.

For real-time applications, Waves offers SoundGrid Audio-over-Ethernet networking and processing technology for live sound, broadcasting, and post-production facilities; D-Show compatible TDM plugins; and Waves MultiRack Native, the first plugin host designed especially for live sound.

WSG-Y16 I/O Interface Card For Yamaha Consoles

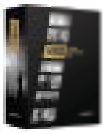
The WSG-Y16 is a mini-YGDAI card, which makes it possible to run Waves plugins on selected Yamaha mixing consoles, using Waves SoundGrid technology. Together with a switch, a server, a Mac or PC, and iLok-authorised Waves plugins, the WSG-Y16 lets you process 16 channels of audio using Waves award-winning reverbs, equalisers, compressors, limiters, delays, and more.

With a rich feature set including a redundancy and recovery safety net, MIDI control from the console, plus scalability and expandability, the WSG-Y16 is an essential asset to any compatible Yamaha mixing console.

Soundgrid Bundles For WSG-Y16

Waves is pleased to offer three fully SoundGrid-compatible plugin bundles that were hand-picked especially for FOH and Monitor engineers.

- SoundGrid Pro Bundle
  SoundGrid Pro takes the 28 plugins from the SoundGrid Essentials bundle, and adds the incomparable character of Waves award-winning modelled hardware processors, including SSL 4000 Collection, CLA Classic Compressors, JJP Analog Legends, and The API Collection.
- SoundGrid Essentials Bundle
  From EQ, compression, reverb, and delay to vocal tools, bass extension, limiting, and level maximisation, SoundGrid Essentials includes the bread and butter plugins to cover all your critical processing needs.
- SoundGrid Prelude Bundle
  12 essential SoundGrid plugins, including L1 Ultramaximizer, H-Delay, H-Comp, Renaissance Channel, Renaissance Vox, Renaissance Bass, and more.



L2 ULTRAMAXIMIZER

The L2 Ultramaximizer limiter, heard on countless hit recordings and soundtracks, has a very fast overshoot-free response that puts the sound up-front with astonishing transparency. The brick wall limiting allows users to set the actual peak level output desired and then set the threshold to make limiting and level rescaling a one-shot process. The L2 significantly increases the average signal level – and thus the perceived loudness, without introducing distortion or side effects. It can also be used in production suites like a vintage limiter for deliberate 'pumping' or limited dynamic range effects, and it's perfect for standardising the level of a broadcaster's transmitter or Internet radio feed.

For mixing, mastering, and more, the L2's legendary combination of look-ahead brickwall peak limiting, level maximisation, and ultra high resolution give you the power and extra gain you need with crystal-clear results every single time.

C4 Multiband

The ultimate multi-band dynamics processor, the C4 does it all: four bands of up and down expansion, limiting, and compression, plus dynamic and standard EQ. Combining technologies from our acclaimed Renaissance Compressor and the powerful C1 Parametric Compander, the C4 gives you unprecedented control over the contours of your mix, with maximum clarity and transparency.

It is both a utilitarian tool (problem solver) for live and post users, and a creative shaping tool for studio mixers and sound designers.

Vocal Rider

Vocal Rider is the first of Waves pioneering new series of Mix tools. Simply put, Vocal Rider rides the levels of vocal tracks, automatically. Instead of manually riding the physical mixing console fader, or tediously drawing in each individual level change on a DAW track, Vocal Rider does it for you, making it a true timesaver. All you need to do is set the target range of the vocal level in relation to the rest of the mix. Then, Vocal Rider compensates for all deviations from the target, intelligently raising or lowering the vocal volume, instantly. And unlike everyday compression, Vocal Rider adds absolutely no additional colouring to the track. The new Vocal Rider Live component includes an exclusive Spill control to differentiate the vocal from background instrumentation and noise, for better tracking and performance.

MAXX BCL

From Lincoln Center to television's American Idol, from tours with Metallica to Cirque du Soleil, MaxxBCL is being used everywhere: in live sound, broadcast, mastering, and post-production.

MaxxBCL incorporates a set of Waves digital processors in a sturdy 2U rack-mount configuration to bring a range of benefits to broadcast production and transmission. Waves MaxxBCL helps broadcasters achieve deep bass that sounds impressive even on portable radio, earbuds, and smaller TVs and car radio systems. The MaxxBCL maximises average levels for greater punch and provides level control and normalisation that is ideal for all broadcast audio, including ISDN and studio/transmitter links, and for creating Internet broadcast streams at maximum quality.

Three of Waves' well-known audio processors are featured in MaxxBCL: the MaxxBass enhancer (which features a second-generation algorithm used in Waves' Renaissance Bass); the Renaissance Compressor; and the L2 Ultramaximizer limiter. All processing is performed in a 48-bit end-to-end path.

MaxxBCL supports optical, coaxial SPDIF, AES/EBU, balanced and unbalanced line level analogue signals. Built for the rigours of the road, MaxxBCL's rugged construction handles even the toughest environments. Best of all, it's easy to use. Its sleek precision controls and backlit display let you focus on the sound, not the box.

WAVES

Waves Audio Ltd
w www.waves.com
w www.waveslive.com

Directory

This directory lists a selection of manufacturers who are directly relevant to or in some way applicable to the live sound technology market. Apologies if we've missed you out. If this is the case, please contact us on +44 (0)1480 461555 or at mail@audiomedia.com and we will correct the ommission in the downloadable pdf version of this supplement (available from www.audiomedia.com).

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Precision Front-End RF Filtering: Senses and rejects potential RF interference before it can reach the receiver

Exceptional Transmitter Linearity: Vastly reduced intermodulation and up to 20 compatible channels in a single frequency band

Active RF Gain Control: Detects and immediately reduces RF signal overloads

CueMode: Patent-pending CueMode allows auditioning of up to 20 different receiver mixes on a single bodypack at the touch of a button

Low Profile, All-Metal Bodypack: Thinnest available, rugged, and loaded with innovative features

Scan & Sync: Identifies and selects the highest number of available grouped RF frequencies and provides 1-touch set-up of transmitters

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